

Service Manual

LCD Television

CHASSIS : SL-110P

**Model : DLP-15D3SHS
DLP-17D3SHS
DLP-20D3AHS**



Caution

: In this Manual, some parts can be changed for improving their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List) in Service Information Center.

Contents

I. Parts with the exception of MODULE

1. Safety Precaution	3
2. Product Specification	4
3. Block Diagram	7
3-1 PCB Structure	
3-2 Power Tree	
3-3 Signal Block Diagram	
4. Description of video circuit	10
5. Schematic Diagram	20
6. PCB Data	29
6-1 DLP-15/17D3SHS	29
6-2 DLP-20D3SHS	31
7. SL-110P Service Data	33
8. Trouble Shooting	40
9. Service Part List	53
9-1 DLP-15D3SHS Service Part List	53
9-2 Difference List of SL-110P	60
10. Adapter	61
11. Inverter	62
12. Exploded View	64
12-1 DLP-15D3SHS	64
12-2 DLP-17D3SHS	65
12-3 DLP-20D3AHS	66

13. SOFTWARE INSTALL

14. SOFT UPGRADE

1. Safety Precautions

1. Safety Precautions

- (1) When moving or laying down a LCD Set, at least two people must work together. Avoid any impact towards the LCD Set.
- (2) Do not leave a broken LCD Set on for a long time. To prevent any further damages, after checking the condition of the broken Set, make sure to turn the power (AC) off.
- (3) When opening the BACK COVER, you must turn off power (AC) to prevent any electric shock.
- (4) When loosening screws, check the position and type of the screw. Sort out the screws and store them separately for reassembling. Because screws holding PCBs are working as electric circuit grounding, make sure to check if any screw is missing when assembling / reassembling. Do not leave any screws inside the set.
- (5) A LCD Set contains different kinds of connector cables. When connecting or disconnecting cables, check the direction and position of the cable beforehand.
- (6) Connect/disconnect the connectors slowly with care especially FFC (film) cables and FPC cables. Do not connect or disconnect connectors instantaneously with force, and handle them carefully for reassembling. Picture 1-1. Panel Gas Exhaust Tube
- (7) Connectors are designed so that if the number of pins or the direction does not match, connectors will not fit. When having problem in plugging the connectors, check their kind, position, and direction.

2. Product Specification

2-1. SPECIFICATION

Model		DLP-15D3SHS	DLP-17D3SHS	DLP-20D3AHS
	CHASSIS NO	SL-110P	SL110P	SL-110P
	Country	Europe	Europe	Europe
	Remote controller	R-47B02	R-47B02	R-47B02
LCD Panel				
	LCD Type	TN (Samaung)	TN (Samsung)	TN (AIO)
	Screen Size	15" (38 cm)	17" (43 cm)	20" (50.8 cm)
	Aspect Ratio	4 : 3	15 : 9	4 : 3
	Resolution	1024 × 768 (XGA)	1280 × 768 (WXGA)	800 × 600 (SVGA)
	Pixel Pitch	0.297 × 0.297 mm	0.2895 × 0.2895 mm	0.51 × 0.51 mm
	Brightness	400 cd/ m ²	400 cd/ m ²	500 cd/ m ²
	Contrast ratio	400 : 1	450 : 1	500 : 1
	Viewing Angle (U/D/R/L)	60° / 65° / 70° / 70°	50° / 60° / 70° / 70°	60° / 60° / 80° / 80°
	Response Time	25 ms	25 ms	16 ms
TV System				
	Color System	PAL / SECAM	PAL / SECAM	PAL / SECAM
	Receiving System	PAL B/G, I/I', D/K, L-SECAM, L'-SECAM	PAL B/G, I/I', D/K, L-SECAM, L'-SECAM	PAL B/G, I/I', D/K, L-SECAM L'-SECAM
	Tuning Method	FVS	FVS	FVS
	Tuner	PATBF19D (PARTSNIC)	PATBF19D (PARTSNIC)	PATBF19D (PARTSNIC)
	Reception Channel	VHF :	VHF :	VHF :
		BAND I : CH2 ~ CH4	BAND I : CH2 ~ CH4	BAND I : CH2 ~ CH4
		BAND II : CH5 ~ CH12	BAND II : CH5 ~ CH12	BAND II : CH5 ~ CH12
		CABLE BAND : S1' ~ S3', S1 ~ S20	CABLE BAND : S1' ~ S3', S1 ~ S20	CABLE BAND : S1' ~ S3', S1 ~ S20
		UHF :	UHF :	UHF :
		HYPER BAND : S21 ~ S41	HYPER BAND : S21 ~ S41	HYPER BAND : S21 ~ S41
		BAND IV, V : CH21 ~ CH69	BAND IV, V : CH21 ~ CH69	BAND IV, V : CH21 ~ CH69
		PIF :	PIF :	PIF :
	IF & SubCarrier	38.9 MHz (B/G, D/K, I/I', L), 34.2 MHz (L')	38.9 MHz (B/G, D/K, I/I', L), 34.2 MHz (L')	38.9 MHz (B/G, D/K, I/I', L), 34.2 MHz (L')
		SIF :	SIF :	SIF :
		33.4 MHz (B/G), 32.4 MHz (D/K, L), 32.9 MHz (I/I'), 41.0 MHz (L')	33.4 MHz (B/G), 32.4 MHz (D/K, L), 32.9 MHz (I/I'), 41.0 MHz (L')	33.4 MHz (B/G), 32.4 MHz (D/K, L), 32.9 MHz (I/I'), 41.0 MHz (L')
		S-subcarrier :	S-subcarrier :	S-subcarrier :
		5.5 MHz / 5.85 MHz (NICAM) / 5.74 MHz (2-Carrier)	5.5 MHz / 5.85 MHz (NICAM) / 5.74 MHz (2-Carrier)	5.5 MHz / 5.85 MHz (NICAM) / 5.74 MHz (2-Carrier)
		Color-subcarrier :	Color-subcarrier :	Color-subcarrier :
		4.43 MHz (PAL), 4.25 MHz / 4.40625 MHz (SECAM)	4.43 MHz (PAL), 4.25 MHz / 4.40625 MHz (SECAM)	4.43 MHz (PAL), 4.25 MHz / 4.40625 MHz (SECAM)
	Audio System	Mono / Stereo / Dual	Mono / Stereo / Dua	Mono / Stereo / Dua
	Channel Memory	99 Channel, Auto Preset	99 Channel, Auto Preset	99 Channel, Auto Preset
Input				
	TV Input	75 Ohm external input terminal (DIN Standard)	75 Ohm external input terminal (DIN Standard)	75 Ohm external input terminal (DIN Standard)
	A/V (R,G,B / COMPOSITE)	Scart Jack × 1	Scart Jack × 1	Scart Jack × 1
	S-Video Input	S-VHS (Y/C) × 1	S-VHS (Y/C) × 1	S-VHS (Y/C) × 1
	Video / Audio	COMPOSITE (NTSC, PAL, SECAM, NTSC4.43) RCA Jack × 1, Audio L/R × 1	COMPOSITE (NTSC, PAL, SECAM, NTSC4.43) RCA Jack × 1, Audio L/R × 1	COMPOSITE (NTSC, PAL, SECAM, NTSC4.43) RCA Jack × 1, Audio L/R × 1
	Component / Audio	COMPONENT (Y, Pb/Cb, Pr/Cr, 480i ~ 1080i) RCA Jack × 1 Audio L/R × 1	COMPONENT (Y, Pb/Cb, Pr/Cr, 480i ~ 1080i) RCA Jack × 1 Audio L/R × 1	COMPONENT (Y, Pb/Cb, Pr/Cr, 480i ~ 1080i) RCA Jack × 1 Audio L/R × 1
	PC Input	VGA ~ XGA	VGA ~ WXGA	VGA ~ SVGA
	PC Audio Input	15Pin D-SUB Jack × 1 Stereo Jack × 1	15Pin D-SUB Jack × 1 Stereo Jack × 1	15Pin D-SUB Jack × 1 Stereo Jack × 1
Output				
	Video / Audio	Scart Jack × 1	Scart Jack × 1	Scart Jack × 1
	Headphone	3.5 mm Mini Stereo Jack × 1	3.5 mm Mini Stereo Jack × 1	3.5 mm Mini Stereo Jack × 1

Product Specification

Other Features				
	Comb Filter	2D	2D	2D
	CTI	○	○	○
	LTI	○	○	○
	OSD	17 Languages	17 Languages	17 Languages
	TELETEXT	10 Page memory TOP / FLOF	10 Page memory TOP / FLOF	10 Page memory TOP / FLOF
	Audio Output	5W (2.5+2.5W) (10%THD, 60%MOD at 1kHz)	5W (2.5+2.5W) (10%THD, 60%MOD at 1kHz)	5W (2.5+2.5W) (10%THD, 60%MOD at 1kHz)
	Speaker	∅ 5 cm × 2	∅ 5 cm × 2	∅ 5 cm × 2
	Aspect ratio control	16 : 9 / ZOOM	4 : 3 / ZOOM	16 : 9 / ZOOM
	Auto Power off	○	○	○
	Wake up	○	○	○
	Sleep time	15/30/45/60/90/120 min	15/30/45/60/90/120 min	15/30/45/60/90/120 min
	Wall mount hole	VESA compatible	VESA compatible	VESA compatible
Power Consumption				
	Max	34 W	40W	50W
	Stand-by	3W under	3W under	3W under
	Power supply	DC 12V	DC 12V	DC 15V
	Power Source	External Adaptor AC 100-240V 50 / 60 Hz	External Adaptor AC 100-240V 50 / 60 Hz	External Adaptor AC 100-240V 50 / 60 Hz
Dimension (W × H × D) mm				
	Set dimension (with Stand)	(463 × 345 × 215) mm	(544 × 358 × 215) mm	(608 × 403 × 215) mm
	Tilt (Front / Back)	5" / 15"	5" / 15"	5" / 15"
	Weight (with Stand)	6.25 kg	7.2 kg	10.95 kg
USER CONTROL & ACCESSORIES				
	Control Button (Set)	Ⓐ POWER Ⓑ TV/VIDEO Ⓒ MENU	Ⓐ POWER Ⓑ TV/VIDEO Ⓒ MENU	Ⓐ POWER Ⓑ TV/VIDEO Ⓒ MENU
		Ⓓ VOL. DOWN Ⓔ VOL. UP	Ⓓ VOL. DOWN Ⓔ VOL. UP	Ⓓ VOL. DOWN Ⓔ VOL. UP
		Ⓕ PR. DOWN(On) Ⓖ PR. UP(On)	Ⓕ PR. DOWN(On) Ⓖ PR. UP(On)	Ⓕ PR. DOWN(On) Ⓖ PR. UP(On)
	Remote Controller (32keys)	Ⓐ POWER Ⓑ MUTE Ⓒ PR. UP	Ⓐ POWER Ⓑ MUTE Ⓒ PR. UP	Ⓐ POWER Ⓑ MUTE Ⓒ PR. UP
		Ⓓ PR. DOWN Ⓔ VOL. UP	Ⓓ PR. DOWN Ⓔ VOL. UP	Ⓓ PR. DOWN Ⓔ VOL. UP
		Ⓕ VOL. DOWN Ⓖ MENU	Ⓕ VOL. DOWN Ⓖ MENU	Ⓕ VOL. DOWN Ⓖ MENU
		Ⓗ NORMAL Ⓘ RED Ⓛ GREEN	Ⓗ NORMAL Ⓘ RED Ⓛ GREEN	Ⓗ NORMAL Ⓘ RED Ⓛ GREEN
		Ⓚ YELLOW Ⓜ CYAN Ⓝ TELETEXT	Ⓚ YELLOW Ⓜ CYAN Ⓝ TELETEXT	Ⓚ YELLOW Ⓜ CYAN Ⓝ TELETEXT
		Ⓝ SLEEP Ⓟ ASPECT Ⓡ PC	Ⓝ SLEEP Ⓟ ASPECT Ⓡ PC	Ⓝ SLEEP Ⓟ ASPECT Ⓡ PC
		Ⓢ TV/AV Ⓣ S.MODE Ⓟ RECALL	Ⓢ TV/AV Ⓣ S.MODE Ⓟ RECALL	Ⓢ TV/AV Ⓣ S.MODE Ⓟ RECALL
		Ⓡ TXT keys Ⓤ 0 ~ 9 Digit keys	Ⓡ TXT keys Ⓤ 0 ~ 9 Digit keys	Ⓡ TXT keys Ⓤ 0 ~ 9 Digit keys
	Accessories	Ⓐ Instruction Ⓑ AC Adapter	Ⓐ Instruction Ⓑ AC Adapter	Ⓐ Instruction Ⓑ AC Adapter
		Ⓒ AC Power Ⓓ Remote Controller	Ⓒ AC Power Ⓓ Remote Controller	Ⓒ AC Power Ⓓ Remote Controller
		Ⓔ Battery (AAA ×2)	Ⓔ Battery (AAA ×2)	Ⓔ Battery (AAA ×2)

Product Specification

2-2. Available Input Signal

(1) PC input

Standard	Resolution (Mode)	V Frequency (Hz)	H frequency (KHz)	15 inch	17 inch	20inch
MAC	640 × 480	66	35	○	○	○
	832 624	75	49.73	○	○	○
IBM	640 480	60	31.47	○	○	○
	720 400	70	31.47	○	○	○
VESA	640 480 (VGA)	72	37.86	○	○	○
	800 600 (SVGA)	60	37.88	○	○	○
		72	48.08	○	○	○
	1024 768 (XGA)	60	48.37	○	○	○
		70	56.48	○	○	○
	1280 768 (WXGA)	60	47.7	×	○	×

(2) Component input

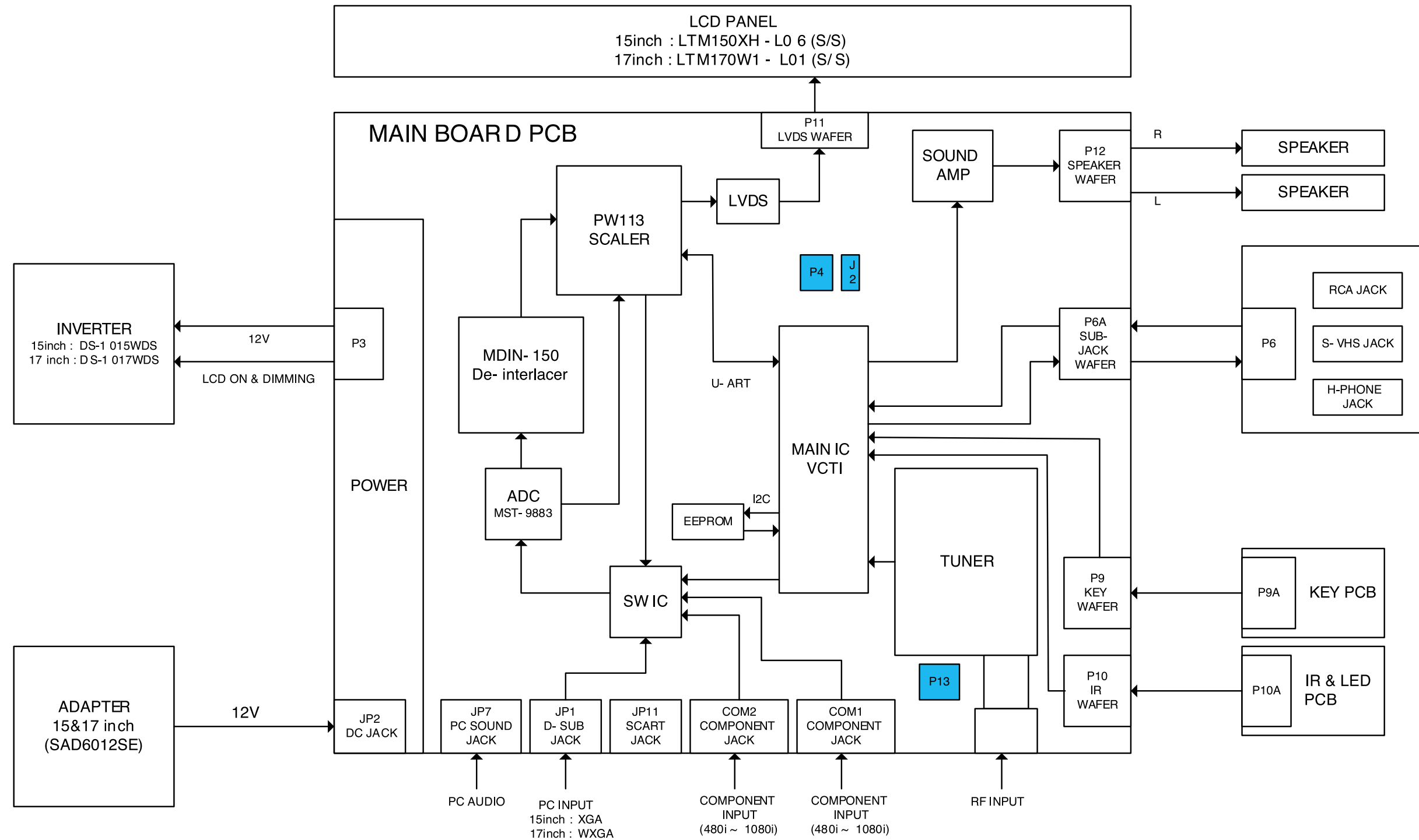
- 480i/ 60 Hz
- 480p / 60 Hz
- 576i / 50 Hz
- 576p / 50 Hz
- 720p / 60 Hz
- 1080i / 50 Hz
- 1080i / 60 Hz

(3) Video input

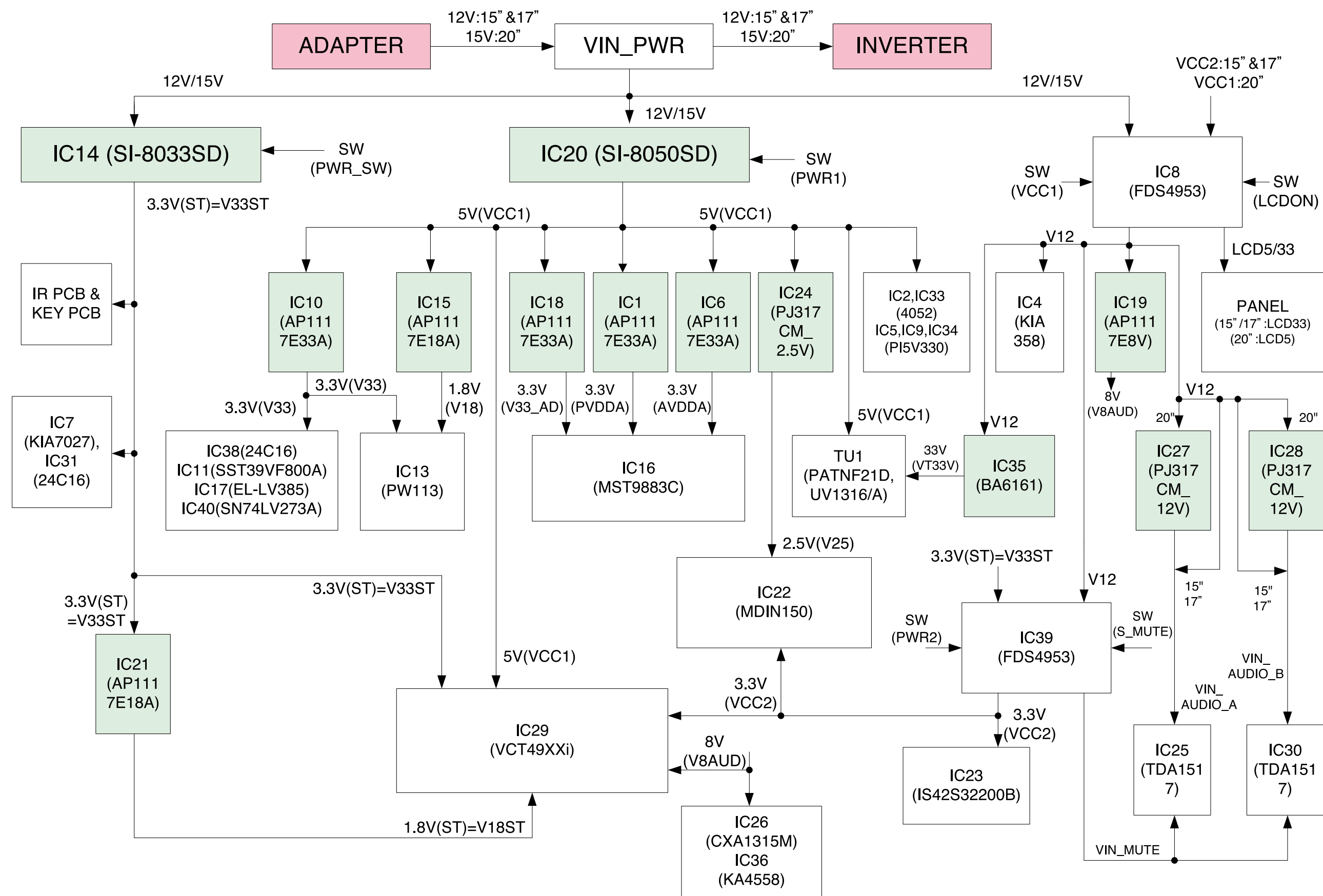
- NTSC-M/4.43
- PAL / SECAM

3. Block Diagram

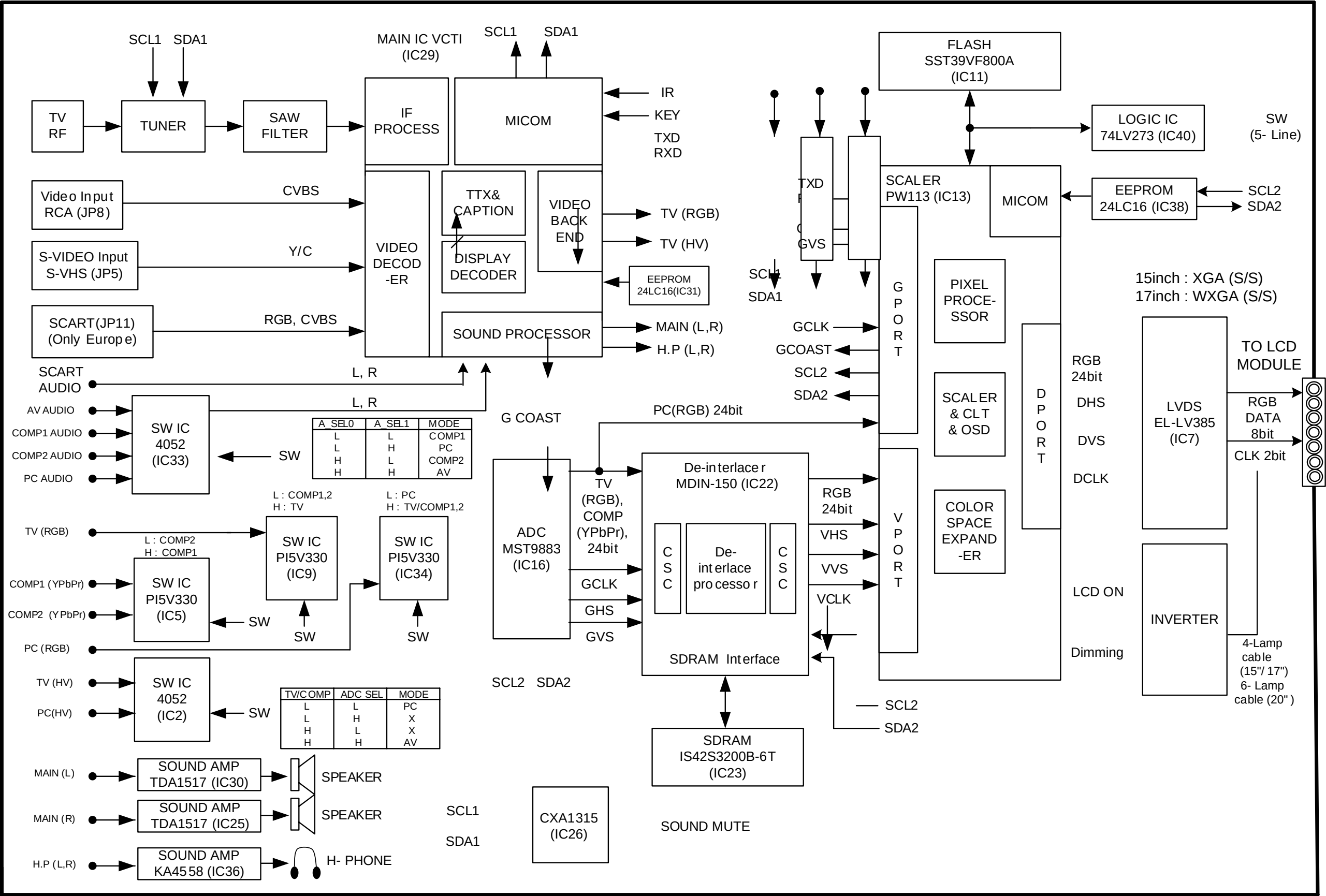
3-1. PCB STRUCTURE



3-2. POWER TREE



3-3. SIGNAL BLOCK DIAGRAM



4. Description of video circuit

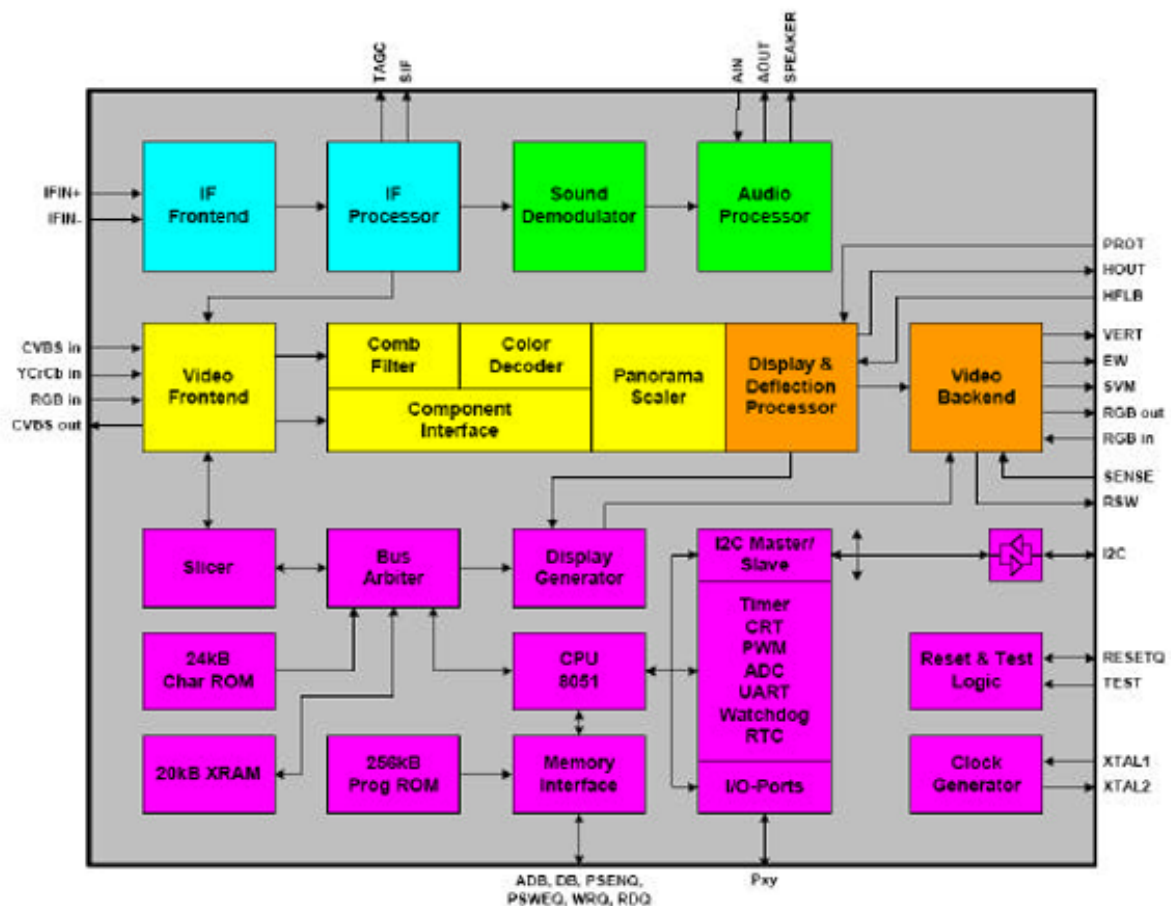
SL-110P video circuit :

Process various input signals <Analog-TV signal, CVBS(NTSC), Y/C signal, Component signal(Y-Pb-Pr 1080i, 720P, 480P, 480i), Analog-PC signal> to produce Output Signal for LCD panel(15" : 1024 × 768, 17" : 1280 × 768, 20" : 800 × 600).

Introduction for main IC

4-1. IC29 (The VCT 49xxI)

: IC family of high-quality single chip TV processors <DRX, MSP, VSP, DDP and SDA>



Description of video circuit

1) DRX

※ Overview of DRX

The Digital Receiver Front-end (DRX) performs the entire multi-standard Quasi Split Sound (QSS) TV IF processing, AGC, video demodulation, and generation of the second sound IF (SIF) requiring only one SAW filter.

All control functions and status registers are accessible via I2C bus interface. Therefore, it simplifies the design of high-quality, highly standardized IF stages.
For pre-filtering, one 8-MHz channel SAW filter must be used.

TV signal → Tuner(TU1) → SAW-filter(S3) → 72 & 73 pin of VCTI(IC 29) → DRX of VCTI

Features

- Multi-standard QSS IF processing with a single SAW
- Programmable IF frequency (38.9 MHz, 45.75 MHz, 32.9 MHz, 36.125 MHz, 58.75 MHz.)
- Digital IF processing for the following standards: B/G, D/K, I, L/L', and M/N
- Standard specific digital post filtering
- Standard specific digital video/audio splitting
- Standard-specific digital AGC and delayed tuner AGC with programmable tuner Take Over Point
- Second SIF output with standard dependent pre-filtering and amplitude controlled output level
- Video demodulation
- Second SIF generation and AGC

Output of DRX : CVBS & SIF

Description of video circuit

2) MSP

※ Overview of MSP

The MSP receives the digital Sound IF signal from the DRX part.

The MSP is able to demodulate all TV sound standards worldwide including the digital NICAM system.

INPUT :

SIF(DRX) → MSP of VCTI

Audio signal(External device) → CD4052(IC33, Switching) → 78&79 pin of VCTI(IC29) → MSP of VCTI

OUTPUT :

84 & 85 of VCTI → TDA1517(IC25 & IC30)

Features

Sound Demodulator:

- worldwide FM/AM-mono demodulation
- FM carrier based demodulation (A2, EIA-J)
- FM stereo radio & RDS demodulation
- Nicam demodulation
- BTSC/SAP with MNR (DBX optional)
- automatic standard detection
- automatic sound select

Audio processing for loudspeaker channel:

- volume
- automatic volume correction (AVC)
- bass & treble or equalizer
- loudness
- balance
- spatial effect (e.g. pseudo stereo)

Description of video circuit

3) VSP

※ Overview of VSP

INPUT :

CVBS(DRX) → VSP of VCTI

Video signal(External device) → 51& 52 & 53 pin of VCTI(IC29) → VSP of VCTI

OUTPUT :

YUV(4:2:2 or 4:4:4)

Features

- multi-standard color decoder PAL/NTSC/SECAM including all substandards
- macro-vision compliant multi-standard sync processing
- macro-vision detection
- letterbox detector (auto-wide)
- 1H delay line (PAL compensation,NTSC combfilter)
- 4H adaptive comb filter (PAL/NTSC)
- vertical peaking (via comb filter)
- linear horizontal scaling (0.25 to 4)
- nonlinear horizontal scaling "panorama vision"
- peaking, contrast, brightness, color saturation and tint for all inputs (CVBS, S-VHS, YCrCb and RGB)
- panorama scaler for all inputs (CVBS, S-VHS, YCrCb and RGB)

Description of video circuit

4) DDP

※ Overview of DDP

The DDP contains the entire digital video component and deflection processing, as well as all analog interfaces to display the picture on a CRT

INPUT :

YUV(4:4:4 , VSP) → DDP of VCTI

OUTPUT :

16 & 17 & 18 pin of VCTI(IC29) → TV_RGB signal

Features

Display processing

- dynamic contrast improvement (DCI)
- dynamic black level expander (BLE)
- luma sharpness enhancement (LSE)
- color transient improvement (CTI)
- brightness, contrast, saturation and tint
- programmable YCrCb to RGB matrix
- static black stretch, blue stretch, gamma correction by a programmable Non-linear Colorspace Enhancer (NCE) on RGB

Deflection Processing

- vertical sawtooth (amplitude, linearity, s-correction, zoom)
- dynamic horizontal EHT (amplitude/phase compensation with $T_c \sim 1\text{line}$)
- vertical angle and bow correction
- horizontal and vertical protection circuit
- soft start/stop of H-drive
- supports horizontal and vertical dynamic focus

Backend Features

- internal analog OSD (RGB/FB/COR) input
- fast-blank priority & monitoring via I2C

Description of video circuit

5) TVT

※ Overview of TVT

TVT of VCTI → UART → PW113(IC13)

The TVT is a Teletext decoder for decoding World System Teletext data, as well as Video Programming System (VPS), Program Delivery Control (PDC), and Wide-Screen Signalling (WSS) data used for PALplus transmissions.

The device also supports Closed Caption acquisition and decoding.

The TVT provides an integrated general-purpose, fully 8051-compatible microcontroller with television-specific hardware features.

The on-chip display unit for displaying Level 1.5 Teletext data can also be used for customer-defined onscreen displays.

Features

Controller Features

- 8-bit 8051 instruction set compatible CPU
- Watchdog timer
- UART
- Real time clock (RTC)
- I2C bus master/slave interface

OSD Features

- 24 kB on-chip character ROM
- Supports all East and West European languages
- National language support (Latin, Cyrillic, Greek, Arabic, Farsi, Hebrew)
- Mosaic graphic character Set

Teletext Features

- Multi-standard digital data slicer
- Full field and VBI data acquisition
- Simultaneous WST, PDC, VPS, and WSS acquisition
- Closed Caption and V-chip acquisition

Description of video circuit

4-2. IC25 and IC30 (TDA1517)

: Class-B dual audio amplifier

INPUT :

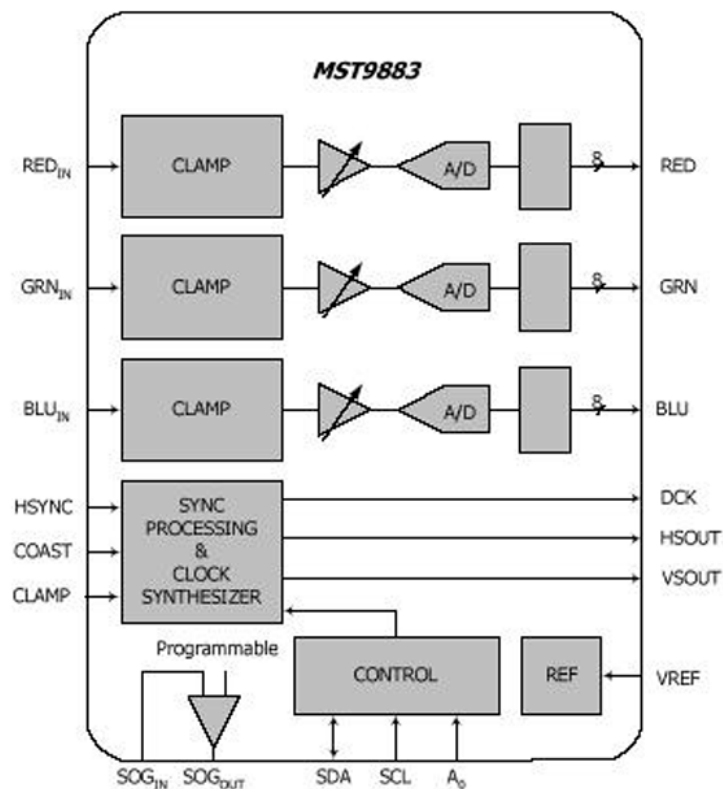
Audio signal (84 & 85 pin of VCTI) → TDA1517

OUTPUT :

Audio signal (TDA1517, amplify) → Speaker

4-3. IC16 (MST9883)

: Triple Video A/D Converter with Clamps & Pixel Clock Synthesizer



INPUT :

1-RF, 1-CVBS, 1-Y/C, 2-Component, 1-PC signal → PI5V330(IC5,9,34), Switching → 43 & 48 & 54 pin of MST9883(IC16)

OUTPUT :

PC signal → Gport of PW113(IC13)

Other signal → MDIN150(IC22)

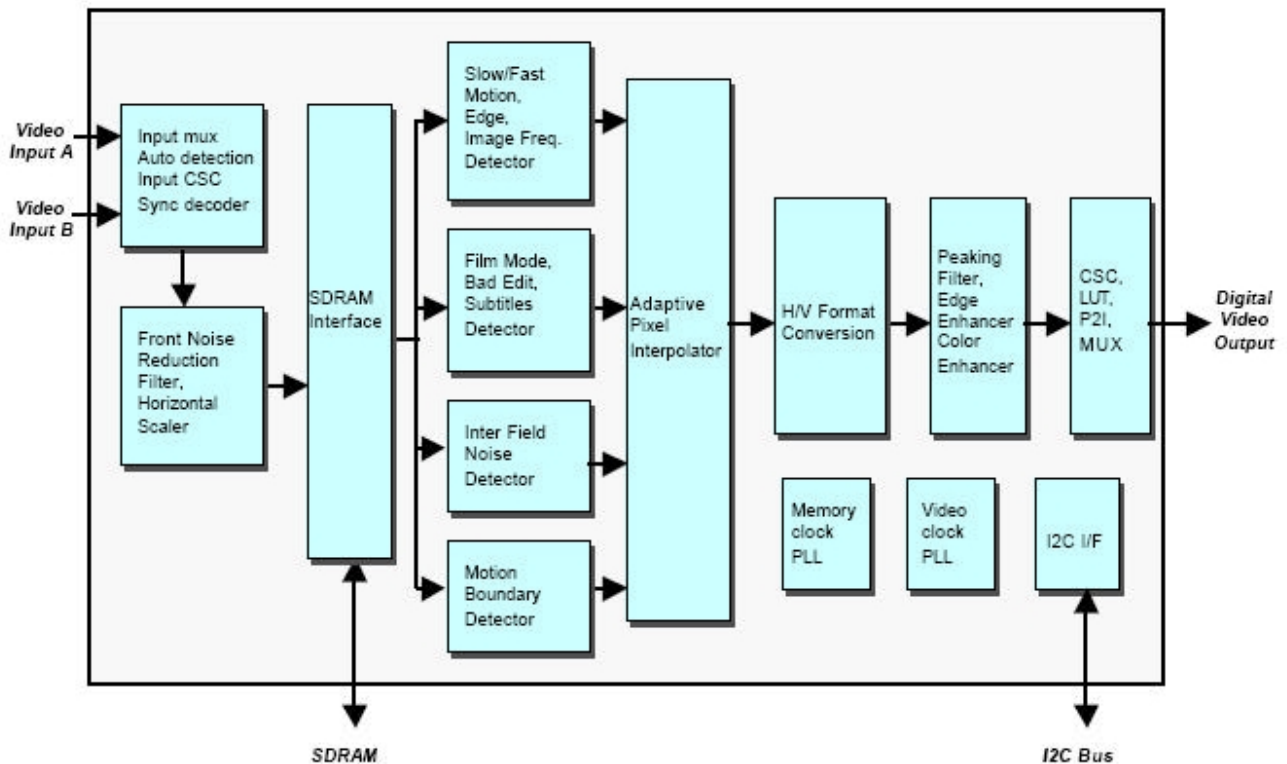
FEATURES OVERVIEW

- Triple ADC with 12 - 140 MHz Sampling Rate
- Integrated line locked PLL generates pixel clock from HSYNC
- 4:2:2 Output Format Mode

Description of video circuit

4-4. IC22 (MDIN150)

: Single chip of de-interlacing and format conversion.



Interlace signal → MDIN150, Progressive signal → PW113(IC13)

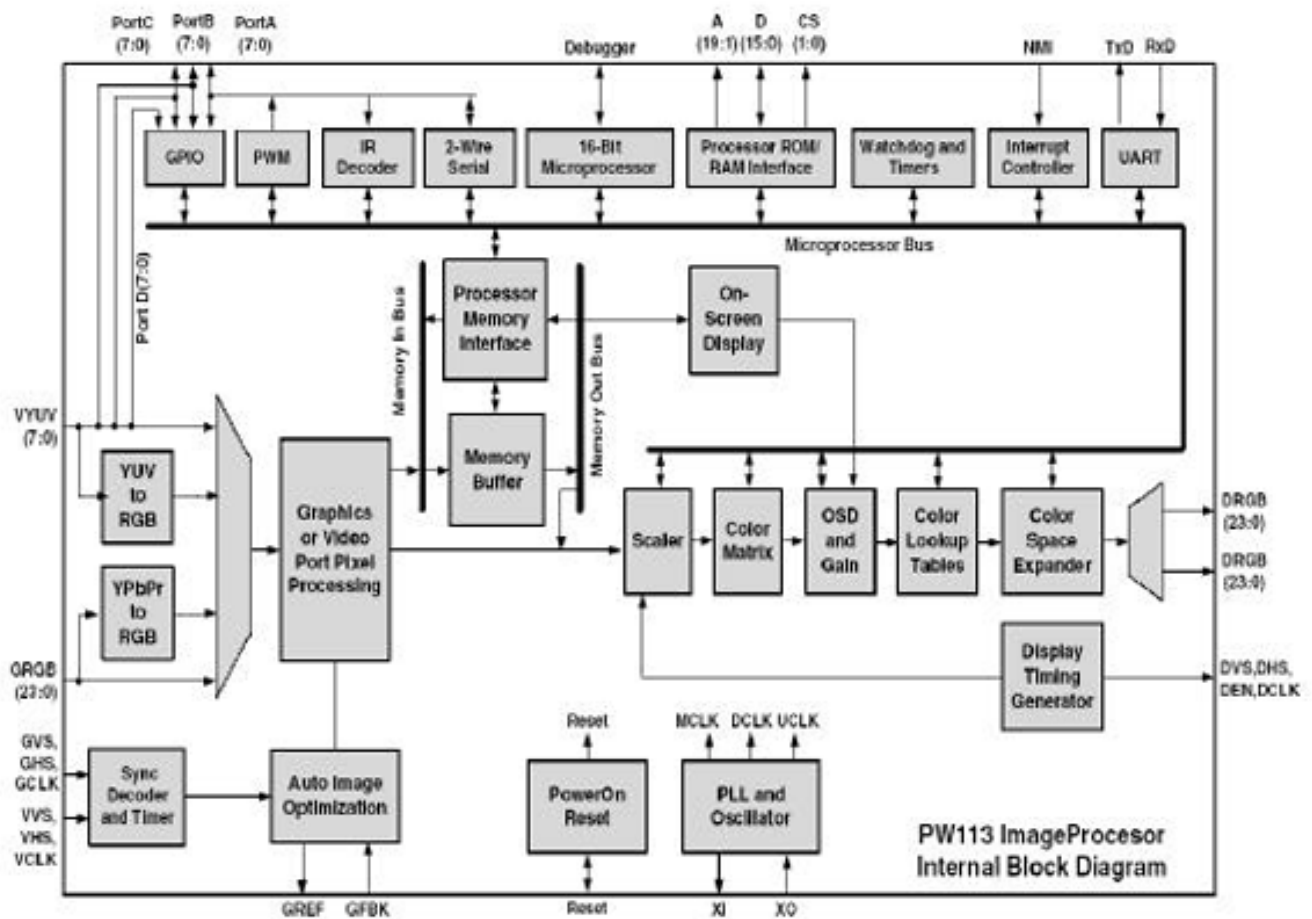
Main Features

- Performs high quality deinterlacing for arbitrary format of interlaced video input up to 1080i
- Motion adaptive 3-D deinterlacing with pixel-by-pixel motion adaptive interpolation
- High quality edge preserving deinterlacing thru multiple directional edge detection and interpolation
- Deinterlacing with fast motion detection and processing
- Deinterlacing with motion boundary preservation using previous 30 fields motion history
- Deinterlacing with film mode detection and processing for film source
- Deinterlacing with bad edit and subtitle detection and adaptation for film source
- Independent horizontal and vertical scaling
- Frame rate conversion with arbitrary conversion ratio
- Inter field noise reduction using previous 30 fields motion history
- Programmable high order peaking filter for horizontal edge enhancement
- Color enhancement filter for smooth color component output
- Programmable brightness, contrast, tint, saturation and gamma control

Description of video circuit

4-5. IC13 (PW113)

: Image processor IC (Scaler IC)



“rocess MDIN output signal to produce Signal for LCD panel(15”± : 1024*768, 17”± : 1280*768, 20”± : 800*600).

Control :

MST9883 and MDIN < I2C >

74LV273A(IC40) <Digital port> → Switching IC

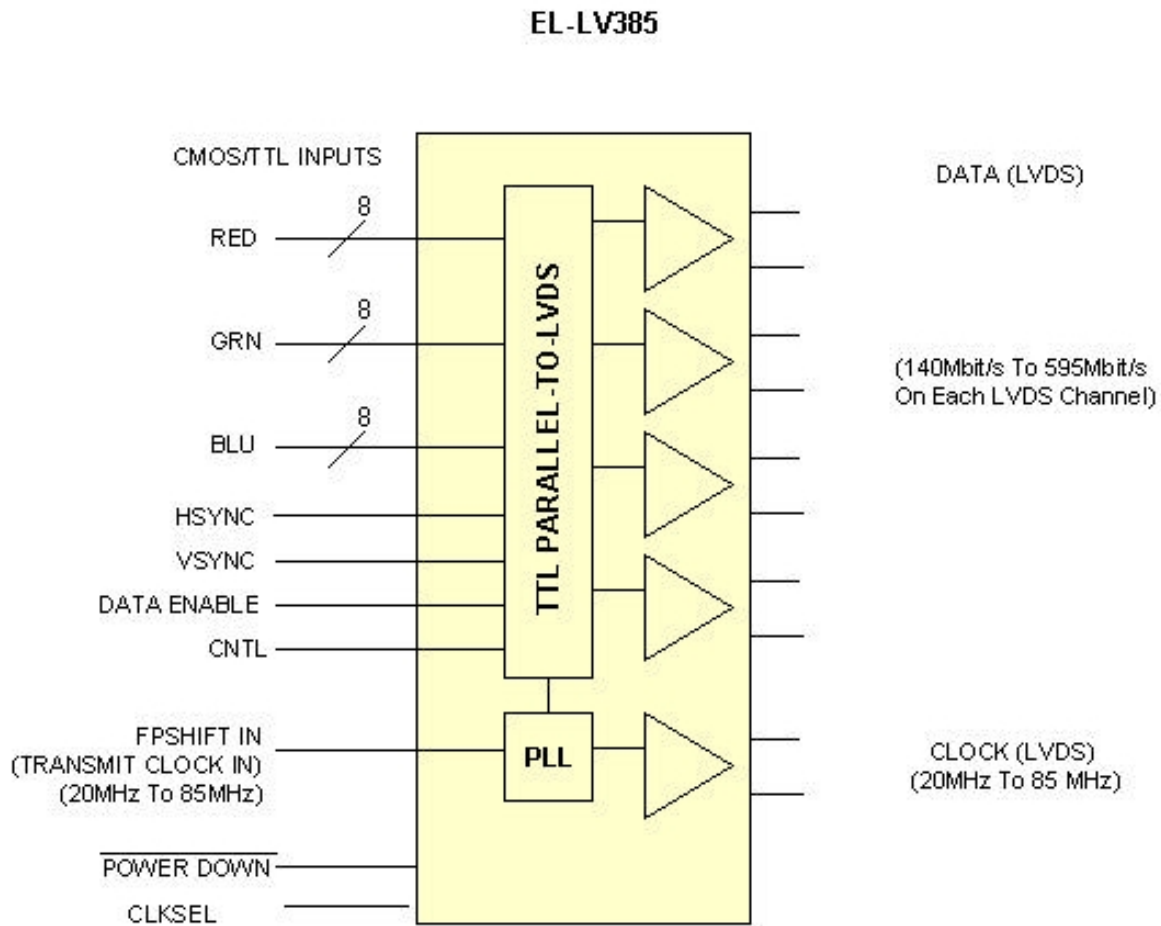
Features

- ITU-R 656 Video Interface
- 2nd Generation Horizontal and Vertical Image Scaling
- Pixel Rate Conversion
- Multi-Region Non-Linear Scaling
- ITU-R 656 Video Interface
- Video Processing
- Advanced OSD Support
- On-Chip 80186 Microprocessor

Description of video circuit

4-6. IC17 (EL-LV385)

: LVDS Transmitter 24-Bit Flat Panel Display (FPD) Link-85 MHz



Output signal of PW113 → LV385 (Converting LVDS signal) → LCD panel

EL-LV385 Transmitter converts parallel 28bits CMOS/TTL data to serial LVDS(Low Voltage Differential Signaling)

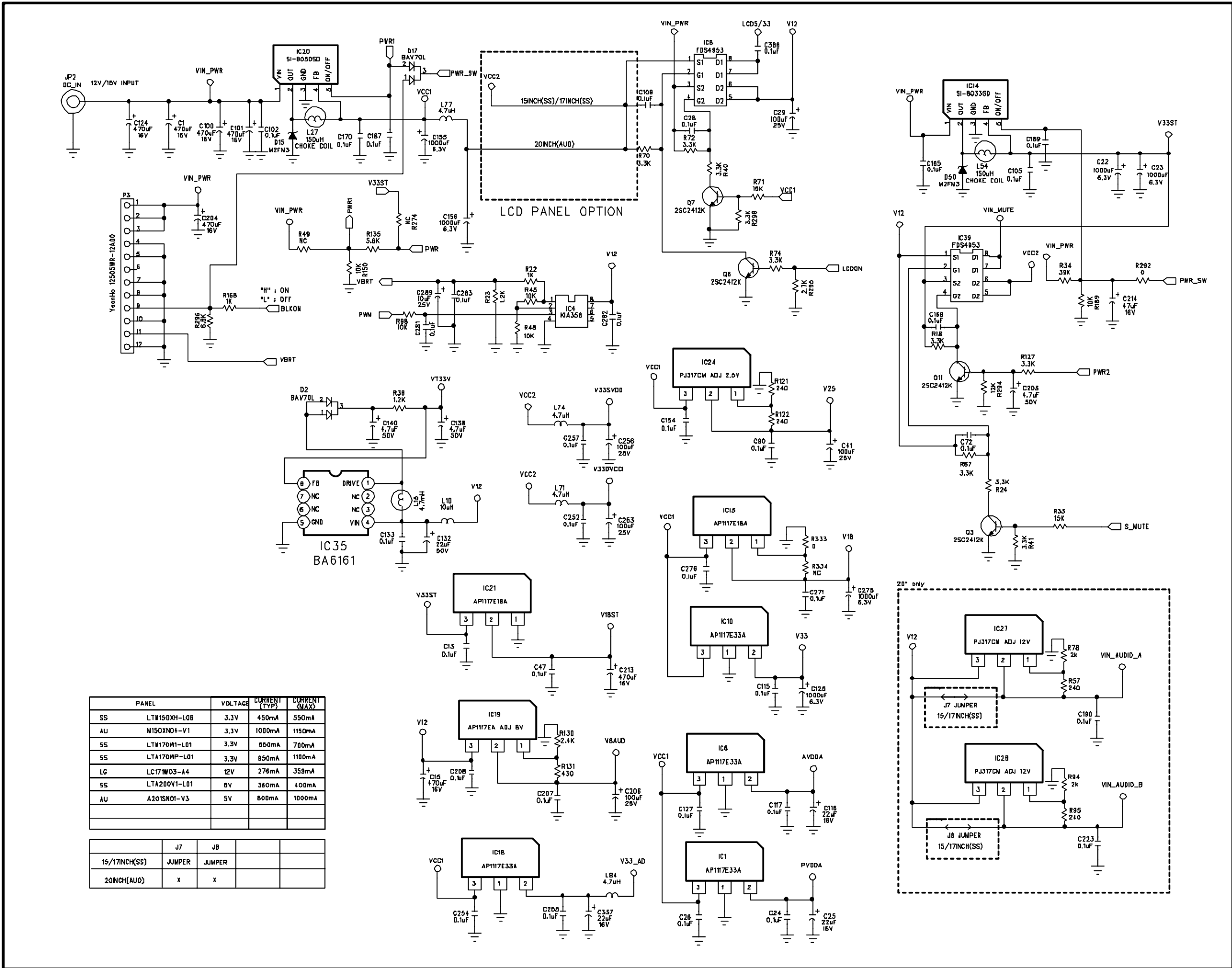
4-7. IC9 and IC34 (PI5V330)

: Quad 2-channel Mux / DeMux, switching IC

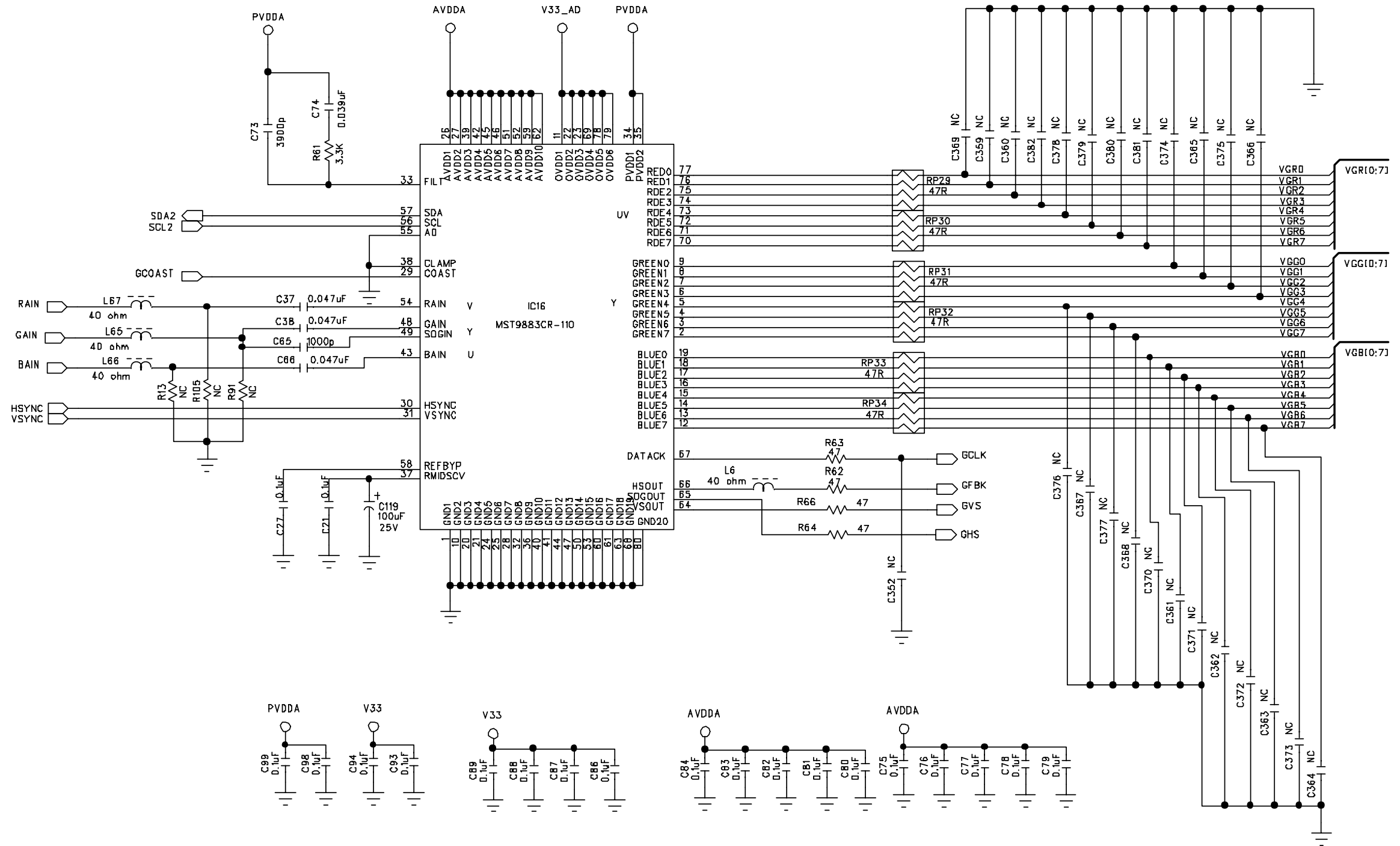
4-8. IC2 and IC33 (4052)

: Dual 4-channel Analog Multiplexer, audio and sync signal switching IC

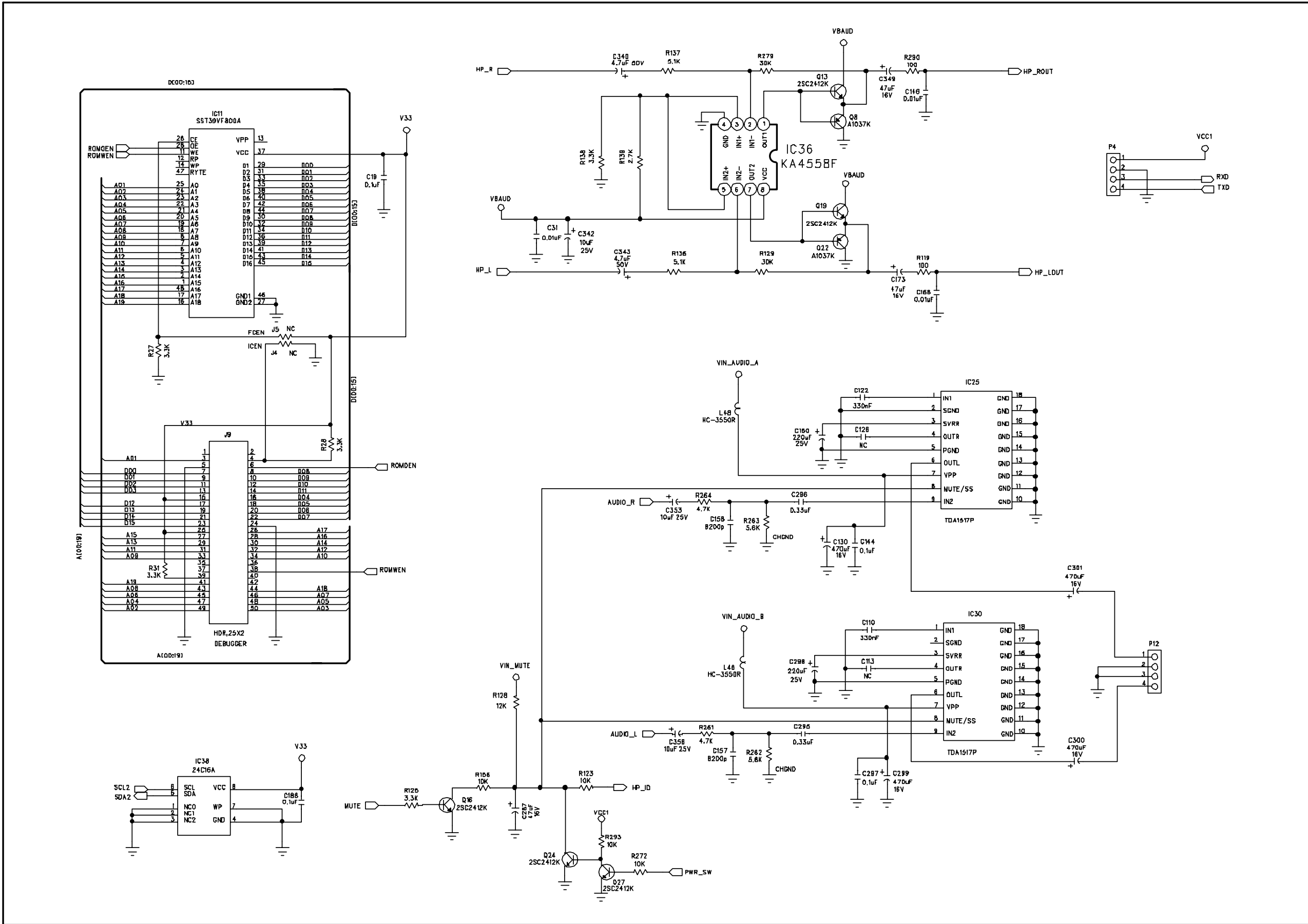
5. Schematic Diagram



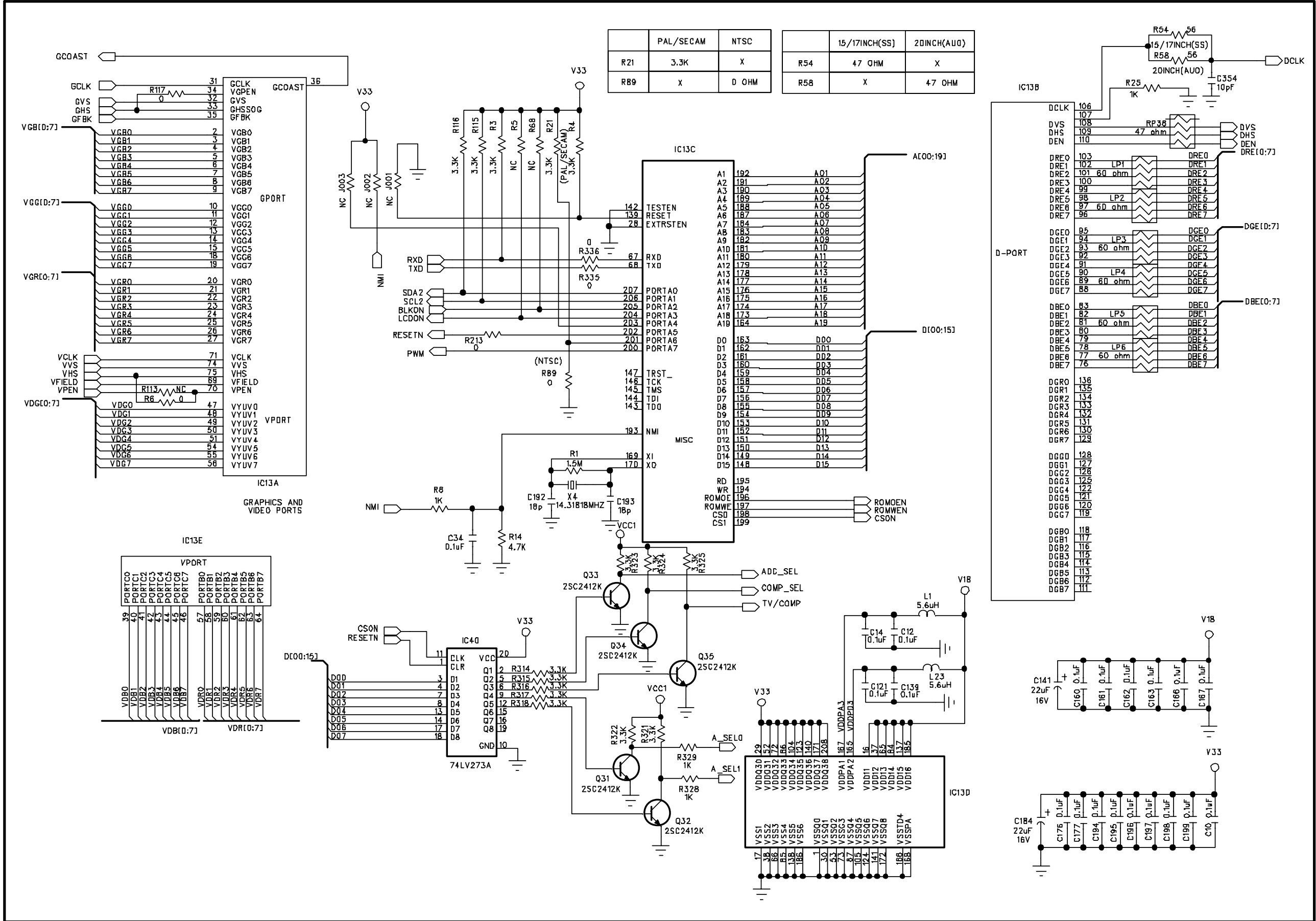
Schematic Diagram



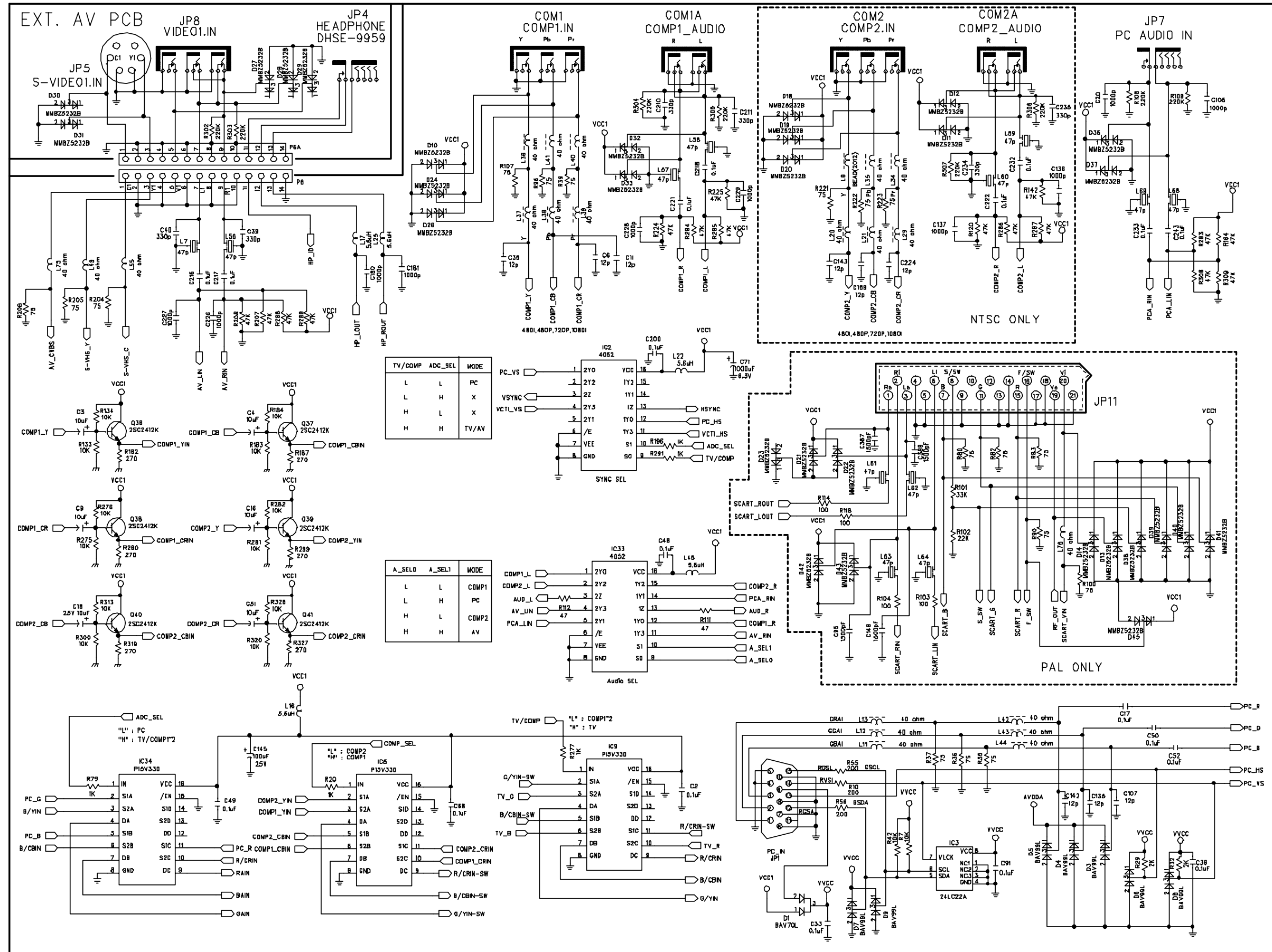
Schematic Diagram



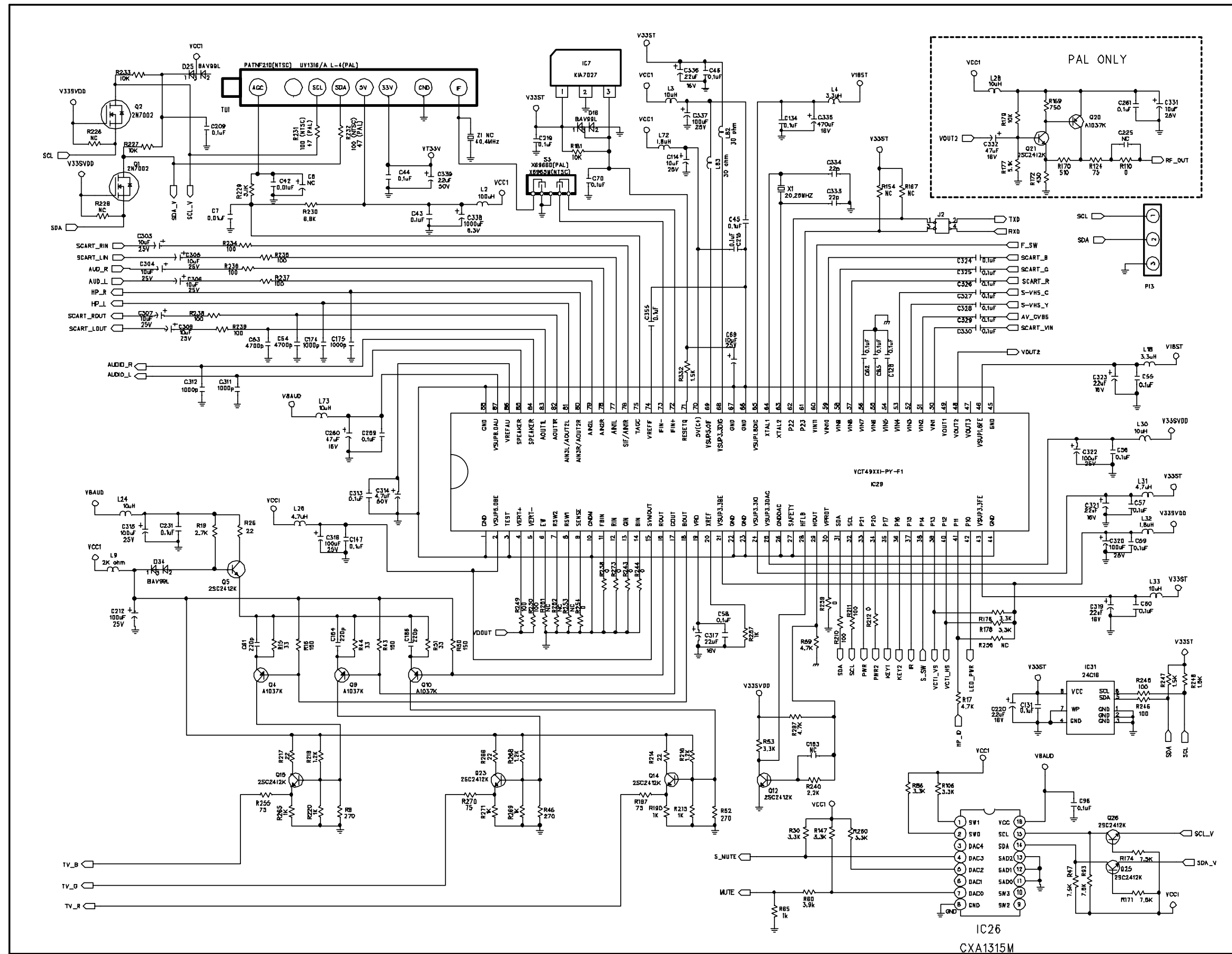
Schematic Diagram



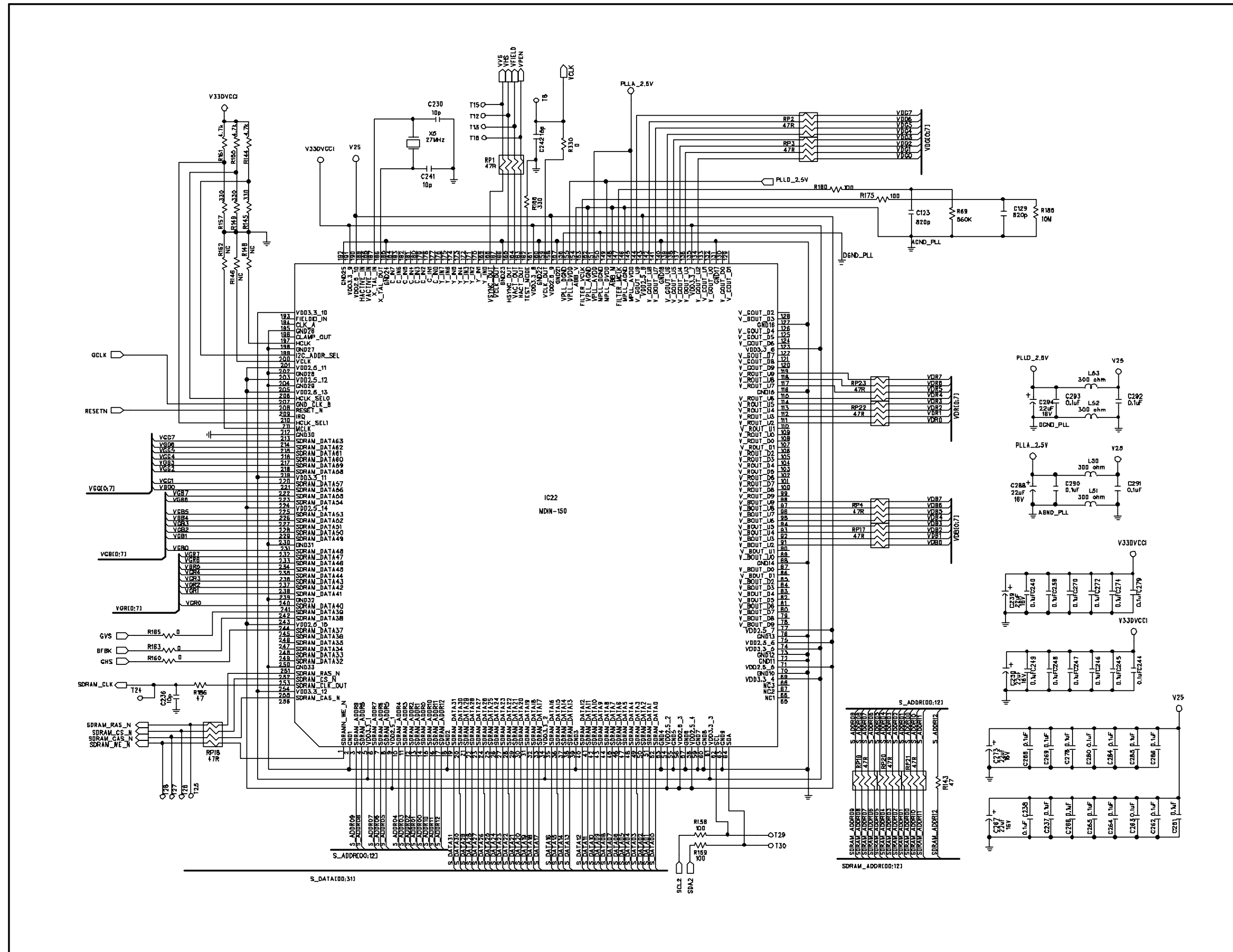
Schematic Diagram



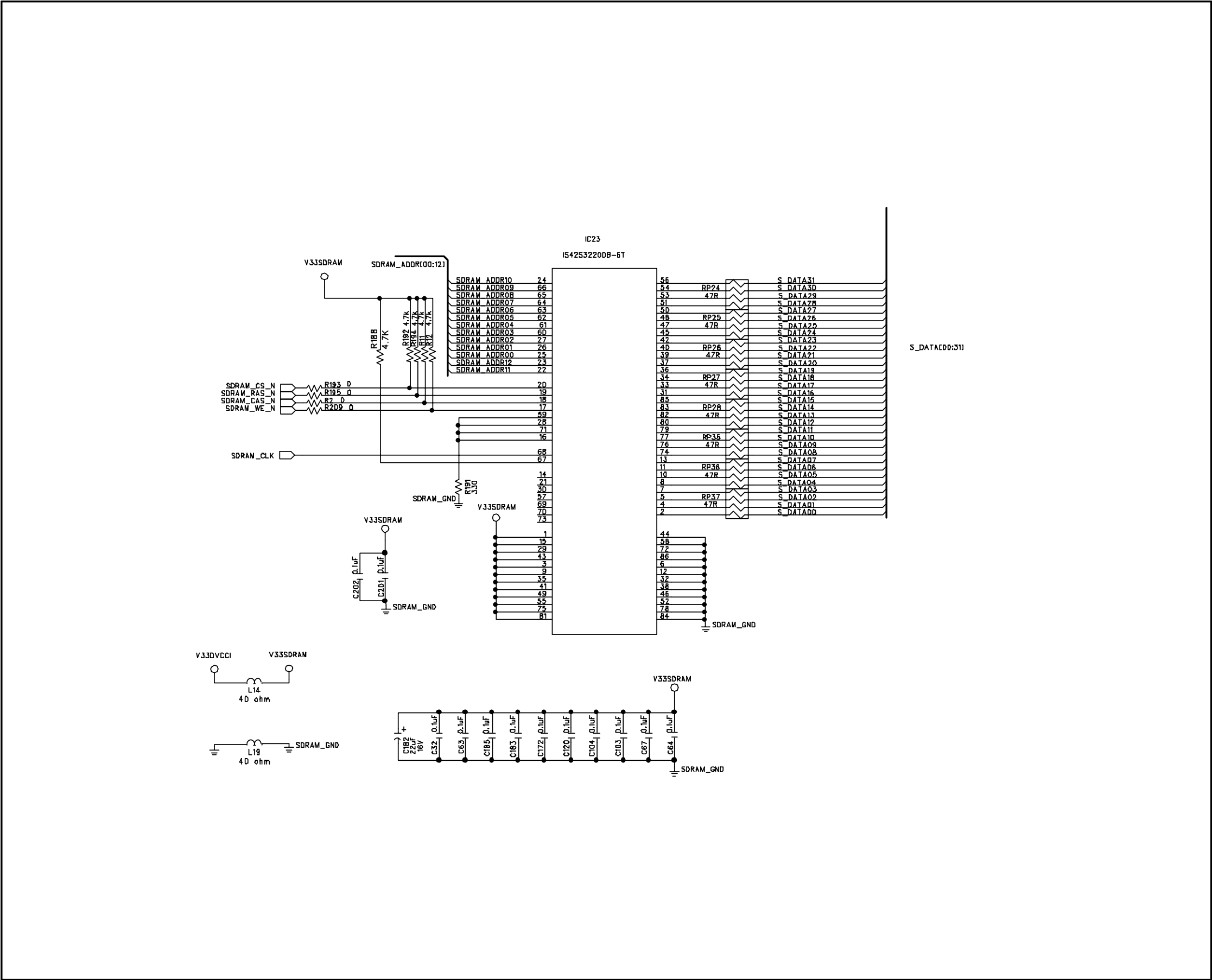
Schematic Diagram



Schematic Diagram

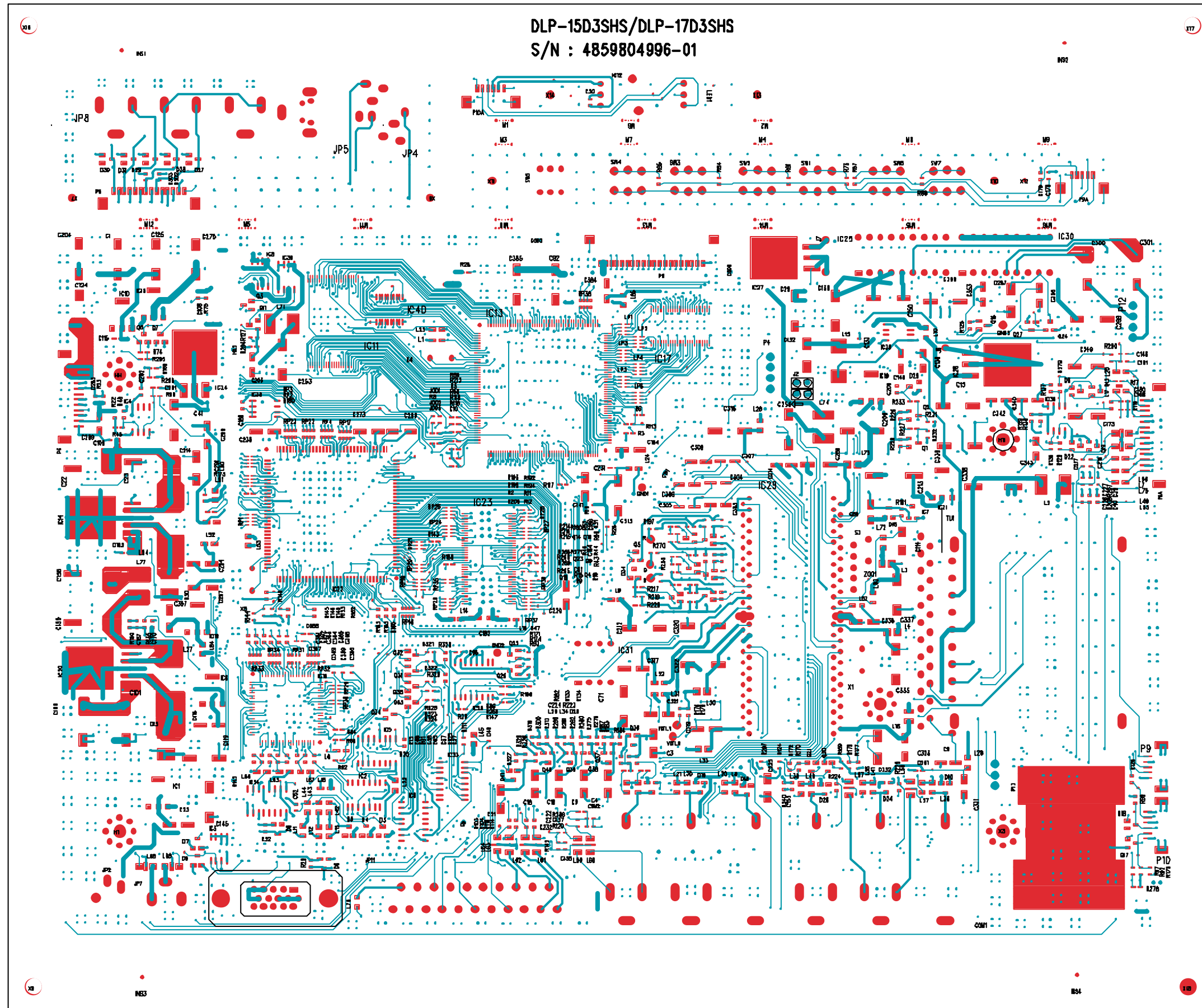


Schematic Diagram

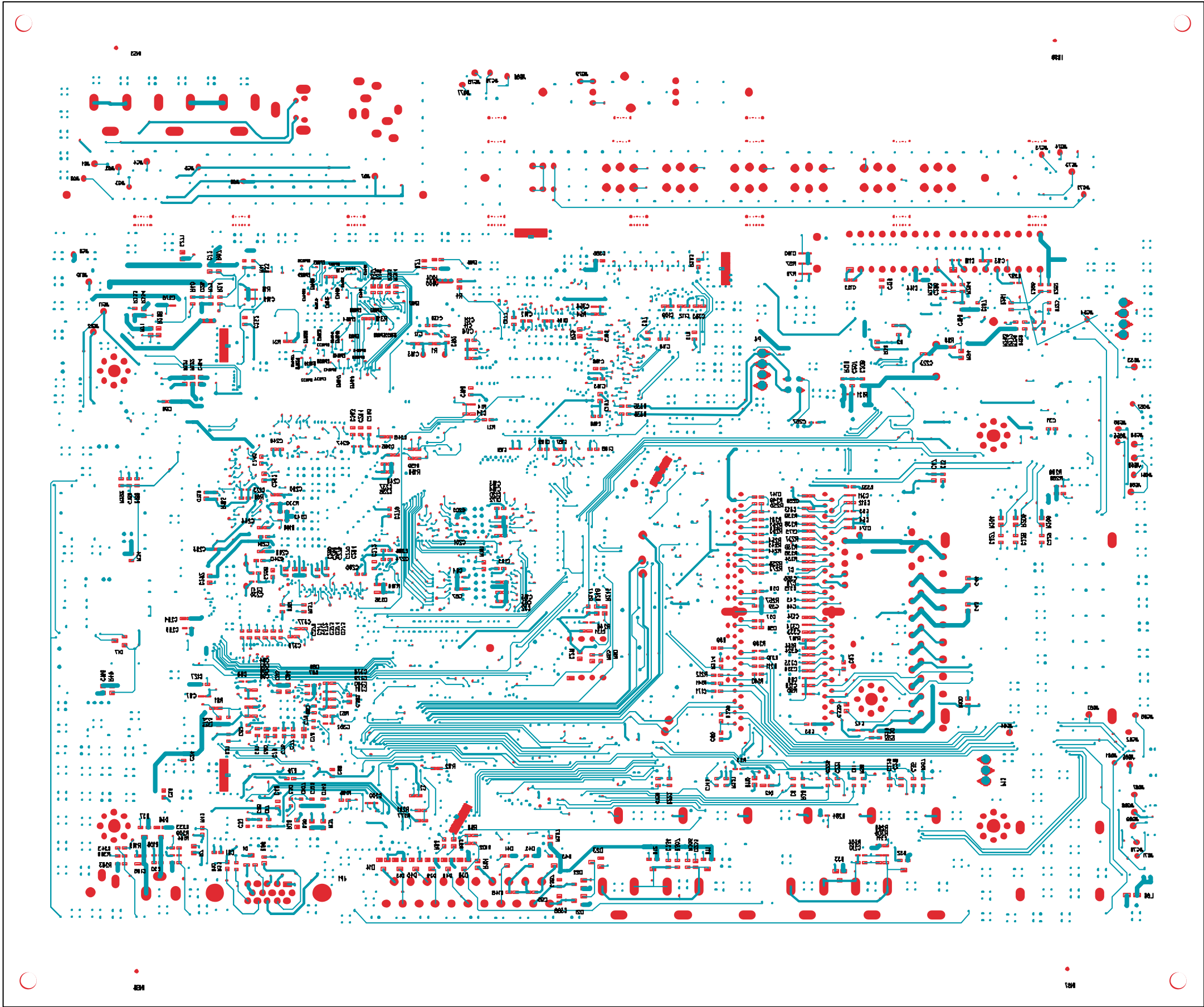


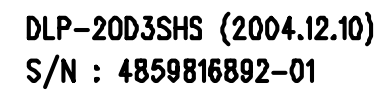
6. PCB Data

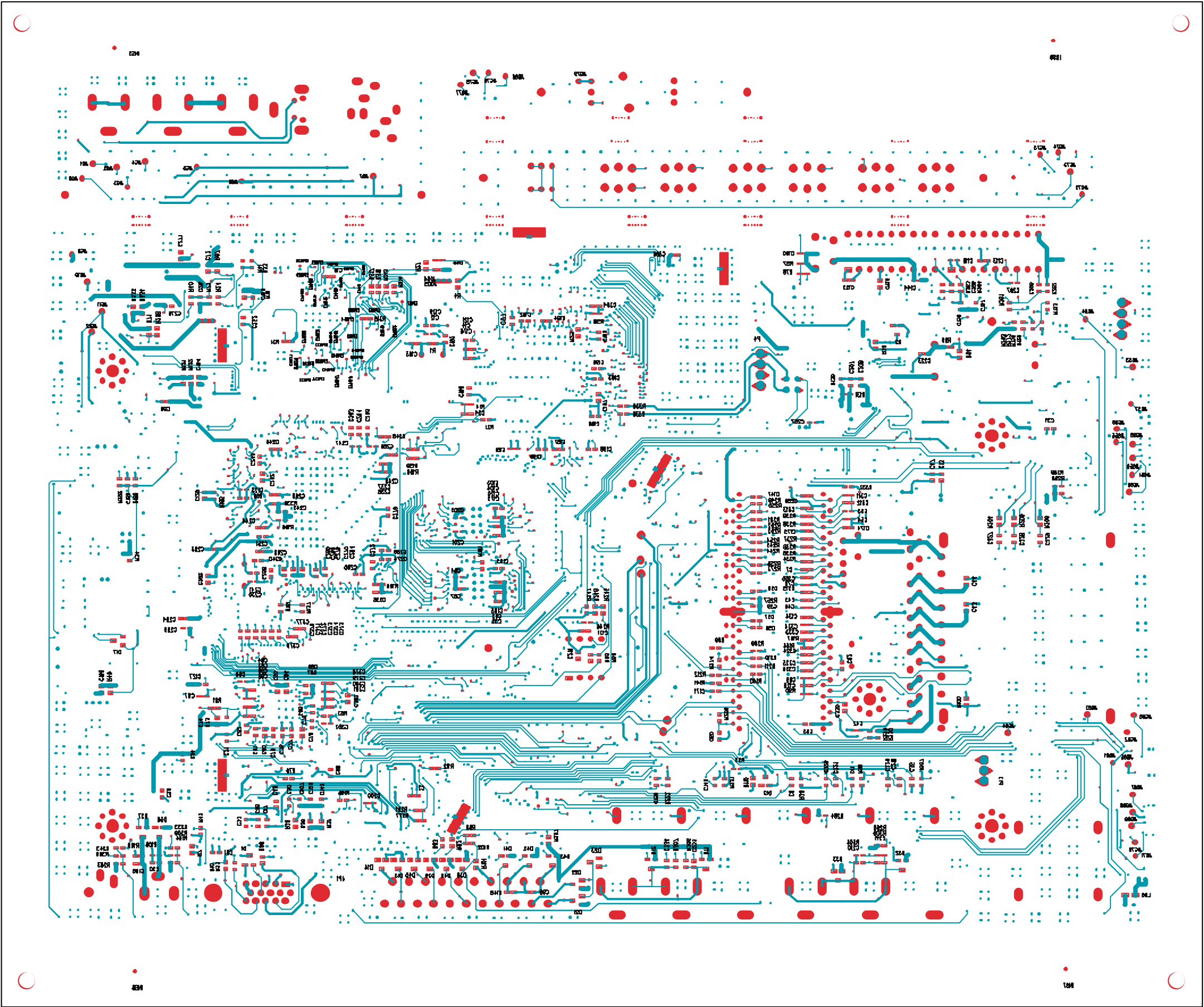
DLP-15D3SHS/DLP-17D3SHS(TOP)



DLP-15D3SHS/DLP-17D3SHS(BOTTOM)







7. SL-110P Service Data

7-1. SL-110P SERVICE DATA

1. HEATRAN ITEM : SVC remote controller

- 1) SCV key
- 2) H/R key : Heatrun 0
- 3) H/R key : Heatrun 1
- 4) H/R key : Heatrun 0
- 5) SCV key : cancel

2. I2C STOP ITEM : SVC remote controller

- 1) SVC key
- 2) S.STOP key : BUS STOP NO
- 3) S.SOTP key : BUS STOP YES (soft update)
- 4) SVC key : cancel

3. Volume ITEM : SVC remote controller

- 1) SVC key
- 2) VOL.MIN key : Volume MIN
- 3) VOL. MAX key : Volume MAX
- 4) SVC key : cancel

4. Dot-Defect ITEM : SVC remote controller

- 1) SVC key
- 2) PART key : RED Screen
- 3) PR UP key : GREEN Screen
- 4) PR UP key : BLUE Screen
- 5) PR UP key : WHITE Screen
- 6) PR UP key : BLACK Screen
- 7) PR UP key : cancel

5. W/B ITEM : SVC remote controller

- 1) SVC key
- 2) SCREEN key : TV
- 3) SCREEN key : PANEL
- 4) R DRV +/- key : Panel_R DRIVE 127
- 5) G DRV +/- key : Panel_G DRIVE 127
- 6) B DRV +/- key : Panel_B DRIVE 127
- 7) R BIAS +/- key : Panel_OFFSET_R 127
- 8) G BIAS +/- key : Panel_OFFSET_G 127
- 9) B BIAS +/- key : Panel_OFFSET_B 127
- 10) SVC key : cancel

6. SUB-Bright ITEM : SVC remote controller

- 1) SVC key
- 2) S-BRI UP/DOWN key : SUB BRIGHTNESS -172
- 3) SVC key : cancel

7. Outgoing ITEM : SVC remote controller

- 1) SVC key
- 2) EX-FACTORY key : OUT GOING
- 3) POWER OFF

SL-110P Service Data

7-2. SL-110P USER_SVC DATA

1. CH MEMORY CONTENTS (Channel data after TV RESET) -- GUMI factory

PR. NO	SYS.	CH	Frequency	PATTERN	remark
30	PAL-B	40CH	623.25 MHZ	W/B	
31	PAL-B	2CH	48.25 MHZ	RETMA	
32	PAL-B	5CH	175.25 MHZ	CROSS HATCH	
33	PAL-B	10CH	210.25 MHZ	COLOR BAR	
34	PAL-B	4CH	62.25 MHZ	DEM	
35	SCM-B	12CH	224.25 MHZ	SCM COLOR BAR	
36	PAL-K	26CH	511.25 MHZ	RETMA	
37	PAL-1	31CH	551.25 MHZ	COLOR BAR	
38	PAL-B	8CH	196.25 MHZ	RED	
39	SCM-L	43CH	647.25 MHZ	FULL COLOR BAR	

2. ADJUSTMENT / OPTION DATA

※ USER_SVC Mode : PR91 → Sharpness 0 → R → G → Y → MENU → SLEEP (User remote controller)

ITEM	CONTENTS	DATA	REMARK	ITEM	CONTENTS	DATA	REMARK
Vertical Geometry	VERT. POSITION	+18		Horizontal Geometry	HOR. POSITION	+200	
	VERT. AMPLITUDE	-120			HOR. RGB POS	+2	
	VERT. ZOOM	+256			PICTURE WIDTH	+30	
	VERT. LINEARITY	-30			TRAPEZE	+5	
	VERT. S-CORRECTION	+40			CUSHION	-5	
	VERT. BLANKING START	+343			ANGLE 0		
	VERT. BLANKING STOP	+4			BOW 0		
Tube Settings	CUTOFF RED	0			HOR. BLANKING START	+1264	
	CUTOFF GREEN	0			HOR. BLANKING STOP	+60	
	CUTOFF BLUE	0			UPPER CORNER	0	
	WHITEDRV. RED	+470			LOWER CORNER	0	
	WHITEDRV. GREEN	+470			UPPER CORNER(SIXTH)	0	
	WHITEDRV. BLUE	+470			LOWER CORNER(SIXTH)	+9	
Additional Settings	PWMV	+1		Optins	FRONT AV(EXT3)	NO	
	DFHB	+1			YCrCb INPUT(EXT4)	NO	
	OSD H-SHIFT	+195			VGA INPUT	NO	
	OSD H-SHIFT SPLIT SCREEN	+220			DVB MODULE	NO	
	OSD V- SHIFT	+36			PICTURE TUBE 16 : 9	NO	
	OSD PIXEL CLOCK	+44			BLUE SCREEN	YES	
					PICTURE MUTE	NO	
Audio Options	FULL AUDIO MENUS	NO			SHOW I2C-OFF	YES	
	SHOW VOLUME BAR	YES			UHF ONLY	NO	
	AUTOSTORE VOLUME	NO			ATS WITH L/L' MODE	YES	
	BBE	NO			SEARCH FOR BG, DK, I	YES	
	VOICE	NO			SEARCH FOR M	NO	
	SRS WOW	NO			STATION IDENT	YES	
	3D-PANORAMA	YES			ATS DELAY TIME(ms)	50	
	MUTE if no carrier	NO		Deviation Settings	M JAPAN	+36	
DRX	STANDARD SELECT	B			BTSC	+36	
	TOP SETTING	+8			DK DUAL	+36	
	VIDEO PEAKING	0			BG	+36	
	SIF REFERENCE	+2			NICAM L	+36	
					NICAM I	+36	
					DK NICAM	+36	
					SAT	+36	
					FM RADIO	+36	
				NVM Edit		-	
				Reset TV-set		-	

SL-110P Service Data

3. USER_SVC Mode (NORMAL 1,2 MODE) :

※ USER_SVC Mode : PR91 → Sharpness 0 → R → G → Y → MENU → NORMAL (User remote controller)

	15"		17"		20"	
	NORMAL 1	NORMAL 2	NORMAL 1	NORMAL 2	NORMAL 1	NORMAL 2
CONTRAST	48	32	48	30	52	35
BRIGHTNESS	40	45	32	45	40	45
COLOUR	32	25	32	30	32	25
SHARPNESS	32	20	32	20	40	20
BRIGHTNESS_PC	45	38	30	22	42	38
CONTRAST_PC	38	30	45	38	36	30
SHARPNESS_PC	32	25	32	25	32	20

4. USER_SVC Mode (EXTERNAL OSD MODE) :

※ USER_SVC Mode : PR91 → Sharpness 0 → R → G → Y → MENU → PC (User remote controller)

ITEM	DATA	REMARK
EXTERNAL BRIGHTNESS	+40	
EXTERNAL CONTRAST	+40	
EXTERNAL OSD	NO	
BRIGHTNESS	+32	
CONTRAST+32	+32	
Inch option	15" / 17" / 20"	15 / 17 / 20 INCH
ATS DISABLE	NO	
Tuner(1=Phil, 0=DW)	+1	
PC ENABLE	YES	
Fine Tuning	0	
0=A, 1=W, 2=E, 3=G, 4=R, 5=I	0	TEXT SEL

W/B ITEM <PC, COMPONENT> : AUTO FIX

ITEM	CONTENTS	DATA	REMARK
W/B(PANEL)	RED DRIVE	12/128/128	15/17/20 INCH
	GREEN DRIVE	125/123/124	
	BLUE DRIVE	118/98/112	
	RED BIAS	128/128/128	
	GREEN BIAS	126/126/125	
	BLUE BIAS	122/126/120	

SL-110P Service Data

7-3. SL-110P MASTER IC EXCHANGING METHOD

1. After exchange EEPROM(IC31), Turn the SET on and wait for 20 sec.

2. Confirm LED Blinking and turn the SET on.

3. TV RESET

: Method (USER remote controller)

1) PR91 → Sharpness 0 → R → G → Y → MENU → SLEEP

2) Select the "Reset TV-set" on the MENU screen.

3) if push the "VOL up" key, MENU screen of "Reset TV-set" appear.

4) Push the "Green" key

5) Automatically Turn the SET OFF and ON.

4. W/B Adjustment

: Method (SCV remote controller)

1) SCV key → SCREEN key → R, G, B DRV & BIAS UP/DOWN key

ITME	CONTENTS	DATA	REMARK	ITME	CONTENTS	DATA	REMARK
W/B(PANEL)	RED DRIVE	139/138/137	15/17/20 INCH	W/B(TV)	CUTOFF RED	0/0/0	15/17/20 INCH
	GREEN DRIVE	128/128/128			CUTOFF GREEN	0/0/0	
	BLUE DRIVE	112/109/107			CUTOFF BLUE	0/0/0	
	RED BIAS	129/130/130			WHITEDRV. RED	470/470/470	
	GREEN BIAS	128/128/128			WHITEDRV. GREEN	470/470/470	
	BLUE BIAS	130/127/127			WHITEDRV. BLUE	470/470/470	

* Enable to adjust W/B value Changing RED and BLUE value of W/B(Panel)

2) SCV key : cancel

5. Inch Option

: Method (USER remote controller)

1) PR91 → Sharpness → 0 → R → G → Y → MENU → PC

2) Select the "Inch Option" on the MENU screen.

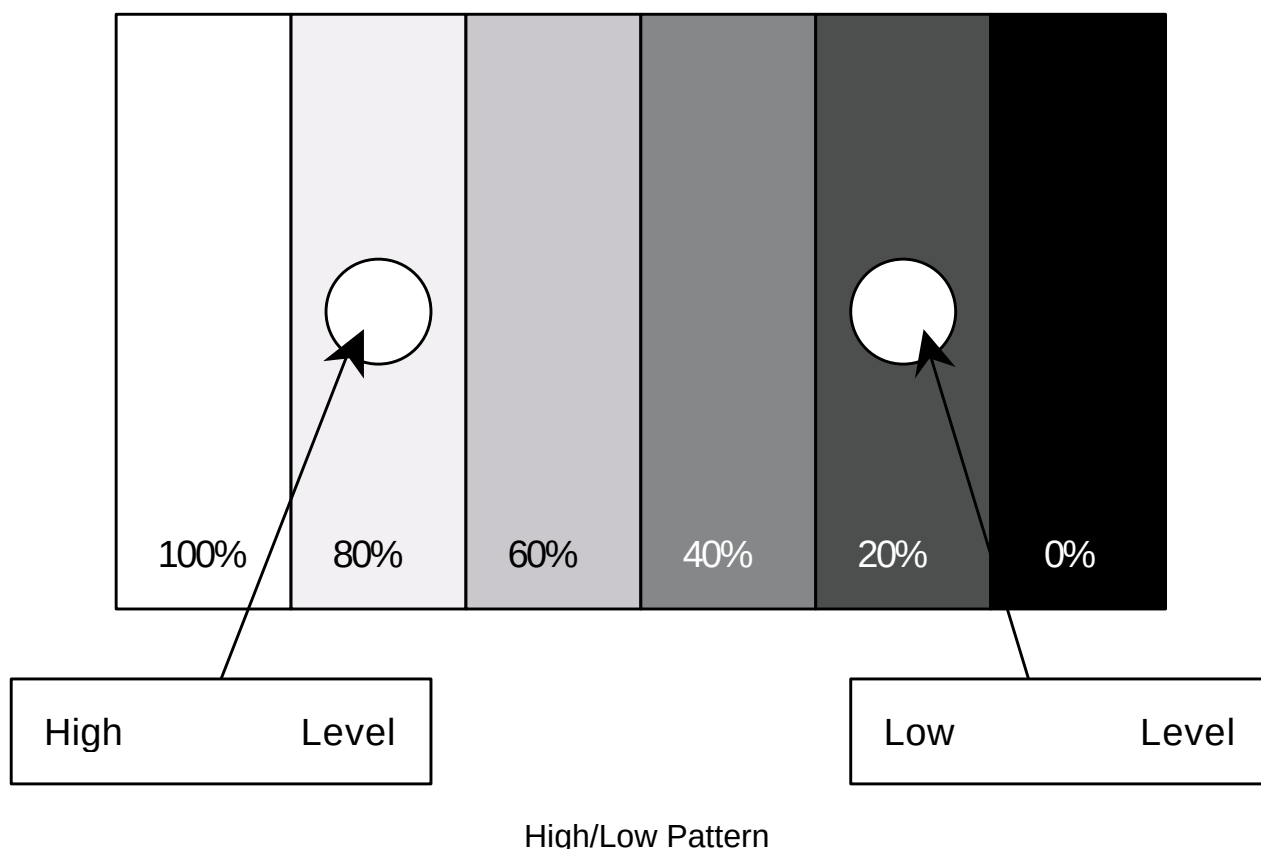
3) Select the proper inch using "VOV up" key.

4) MENU key : cancel

SL-110P Service Data

7-4. Adjusting White Balance

1. More than 30 minutes, heat-run the set in full-white mode whit H/R button of SVC remote controller.
2. Apply HIGH/LOW PATTERN of WHITE BALANCE TESTER (NITSUKI 2849) to Video input terminal (CROMA : OFF, Reference : G)



3. Adjust Picture mode, "Normal1".
4. Check initial data of User Menu.
5. To enter Service Mode, Push PR91 → SHARPNESS 0 → R → G → Y → MENU → PC KEY of User remote controller.
6. Check initial data of Service Mode.
7. Attach a sensor of White Balance Meter (CA-100) to 80% / 20% of white level on the screen.
8. Push SVC KEY of SVC Remote controller to enter SVC Mode.
9. Push SCREEN KEY of Remote controller in SVC Mode. (PANEL /TV MODE Convert)
10. Adjust White Balance by adjusting R DRV, B DRV
 - Coordinate of Color is $x=280 \pm 3$, $y=290 \pm 3$ and the Y is 150 cd/m^2 .
11. Attach a sensor of White Balance Meter (CA-100) to 20% of white level on the screen
12. Adjust White Balance by adjusting R Bias , G Bias
 - Coordinate of Color is $x=280 \pm 3$, $y=290 \pm 3$ and the Y is 10 cd/m^2 .
13. Repeat No 7 to No 12 until getting that Coordinate of Color is $x=280$, $y=290$.
14. To exit from Service mode, press SVC button on the SVC remote controller.

7-5. COMPONENT and PC Test

(1) COMPONENT MODE

PCB LINE :

- Resolution : 480i or 720p - PATTERN : COLOR BAR

Finish LINE :

- Resolution : 1080i/60Hz - PATTREN : COLOR BAR

(2) PC MODE

PCB LINE :

- Resolution : 800 × 600 (SVGA VESA 72Hz)

- PATTERN : FULL COLOR BAR

Finish LINE :

- 15 INCH (1024 × 768 70Hz : VESA XGA)

- 17 INCH (1280 × 768 60Hz : VESA WXGA)

- 20 INCH (600 × 800 72Hz : VESA SVGA)

- PATTERN : 16 GARY)

(3) Test screen condition

SL-110P Service Data

7-6. PANEL DEFECT Test

Visual Inspection	15" SS panel	17" SS panel	20.1" AUO panel
Bright Spot	diameter ≤ 0.8 mm. Numberr ≤ 4 .	diameter ≤ 0.8 mm. Numberr ≤ 4 .	diameter ≤ 0.5 mm. Numberr ≤ 5 .
Dark Spot	diameter ≤ 0.8 mm. Numberr ≤ 4 .	diameter ≤ 0.8 mm. Numberr ≤ 4 .	diameter ≤ 0.5 mm. Numberr ≤ 5 .
Bright Lines	Width ≤ 0.1 mm & length ≤ 3.0 mm. Number ≤ 4 .	Width ≤ 0.08 mm & length ≤ 2.0 mm. Numberr ≤ 4 .	Width ≤ 0.15 mm & length ≤ 10.0 mm. Numberr ≤ 5 .
Dark Lines	Width ≤ 0.1 mm & length ≤ 3.0 mm. Number ≤ 4 .	Width ≤ 0.08 mm & length ≤ 2.0 mm. Numberr ≤ 4 .	Width ≤ 0.15 mm & length ≤ 10.0 mm. Numberr ≤ 5 .
Polarizer Scratch	Width ≤ 0.1 mm & length ≤ 10.0 mm. Number ≤ 3 .	Width ≤ 0.1 mm & length ≤ 5.0 mm. Numberr ≤ 3 .	Width ≤ 0.15 mm & length ≤ 20.0 mm. Numberr ≤ 5 . (circle scratch : diameter ≤ 20.0 mm. Number ≤ 5 .)
Polarizer dent/bubble	diameter ≤ 0.8 mm. Numberr ≤ 3 .	diameter ≤ 0.8 mm. Numberr ≤ 6 .	diameter ≤ 0.5 mm. Numberr ≤ 5 .
Max. Defects	Numberr ≤ 7 .	Numberr ≤ 10 .	

Electrical Inspection	15" SS panel	17" SS panel	20.1" AUO panel
Bright Dot	random number ≤ 2 . 2 neighboring dots ≤ 1 . 3 neighboring dots ≤ 0 .	random number ≤ 2 . 2 neighboring dots ≤ 1 . 3 neighboring dots ≤ 0 .	random number ≤ 2 . 2 neighboring dots ≤ 0 .
Dark Dot	random number ≤ 7 . 2 neighboring dots ≤ 2 . 3 neighboring dots ≤ 1 . neighboring dots ≤ 0 .	random number ≤ 6 . 2 neighboring dots ≤ 2 . 3 neighboring dots ≤ 0 .	random number ≤ 5 . 2 neighboring dots ≤ 0 .
defect min distance	distance between bright sots ≥ 15 mm. distance between dark dots ≥ 5 mm.	distance between bright sots ≥ 15 mm. distance between dark dots ≥ 5 mm.	distance between bright sots ≥ 15 mm. distance between dark dots ≥ 5 mm.
Max. Defects	number ≤ 7 .	number ≤ 6 .	number ≤ 5 .

condition	watching distance : 30 - 50 cm luminance : 300 - 700 lux (nominal 500 lux) temperature : 25 $\pm$ 3 $^{\circ}$ C angle : front pattern : R, G, B, black, white test : active area	watching distance : 50 - 70 cm luminance : 300 - 700 lux (nominal 500 lux) temperature : 25 $\pm$ 5 $^{\circ}$ C angle : front pattern : R, G, B, black, white test : active area	watching distance : 60 $\pm$ 5 cm luminance : 300 - 700 lux temperature : 25 $\pm$ 25 $^{\circ}$ C angle : front pattern : R, G, B, black, white test : active area
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(1) SVC KEY on the SVC remote controller => PART key => PR DOWN / UP KEY
TEST PATTERN : R, G, B, White, Black (Toggle : PR KEY)
PART KEY : Cancel

(2) Test method : In each pattern of R, G, B, White, Black, Check the DOT DEFECT number.

8. Trouble Shooting

8. Trouble Shooting

* Facts you must know at trouble diagnosis or repairing

- (1) The trouble diagnosis and repairing of set means Module or Main IC Exchange.
In other words, find out which PCB modules or Main ICs are not working and replace them with normal PCB modules or ICs.
- (2) This TROUBLE SHOOTING list only contains representative and simple PCB or Main IC trouble diagnosis and Module or Main IC Exchange method. Therefore, if you find Sets that are difficult to diagnose or to repair, contact Daewoo Electronics.
- (3) Basic TROUBLE SHOOTING procedure :

Check Trouble Symptoms → Detach Back Cover → Trouble Diagnosis → Replace broken PCB module or Main IC → Heat-run (for at least 30 minutes, input Test pattern full white) → Adjust white balance → Function Check → Repair Complete.
- (4) Required equipments for trouble diagnosis
 - Digital Multi-meter (measure Dc voltage, measure Diode Voltage, Short-Open test)
 - Screwdriver (or electric screwdriver), plastic adjusting tool
- (5) Each block operation was explained including Digital Oscilloscope signal, but this is reference only and applying them for repair is not necessary.
- (6) Before assemble/disassemble PCBs, check to see if AC Switch is OFF.
- (7) After Back cover is closed, redo Heat-run for at least one hour by inputting Full white using test pattern of service mode. Check the screen conditions and basic functions.

Symptoms of adaptor, inverter, panel Trouble

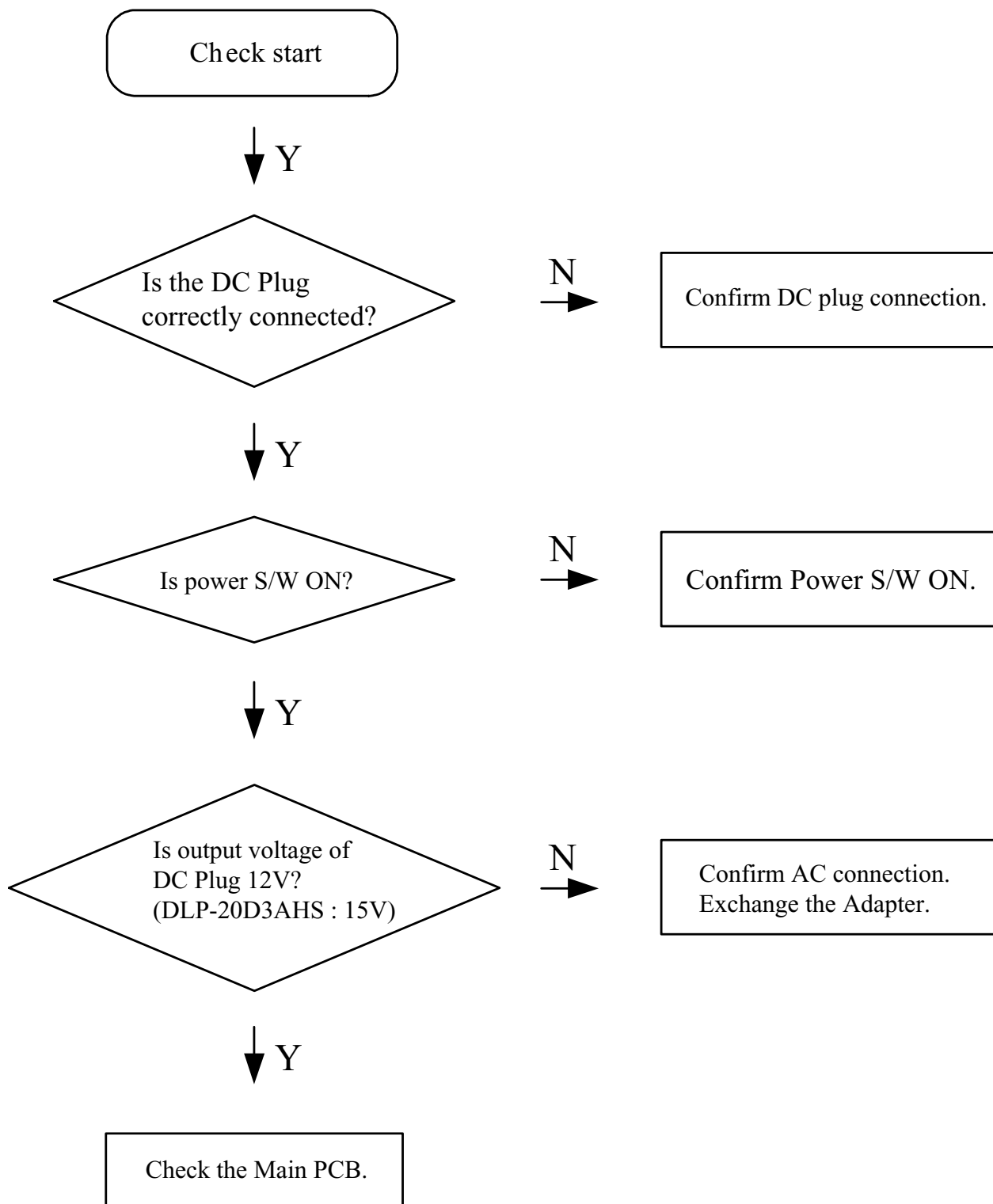
- <Symptom.1> Not even weak discharge (luminescence) shows on screen.
- <Symptom.2> Discharge (luminescence) on screen is unstable
- <Symptom.3> Set is producing unusual noise

Symptoms of VIDEO or JACK PCB Trouble

- <Symptom.1> Only weak discharge (luminescence) shows on screen, but No Data is on screen
- <Symptom.2> Screen DATA is abnormal
- <Symptom.3> Particular input signal (Video, PC or Component etc.) does not operate
- <Symptom.4> No SOUND
- <Symptom.5> Remote Control or KEY does not operate

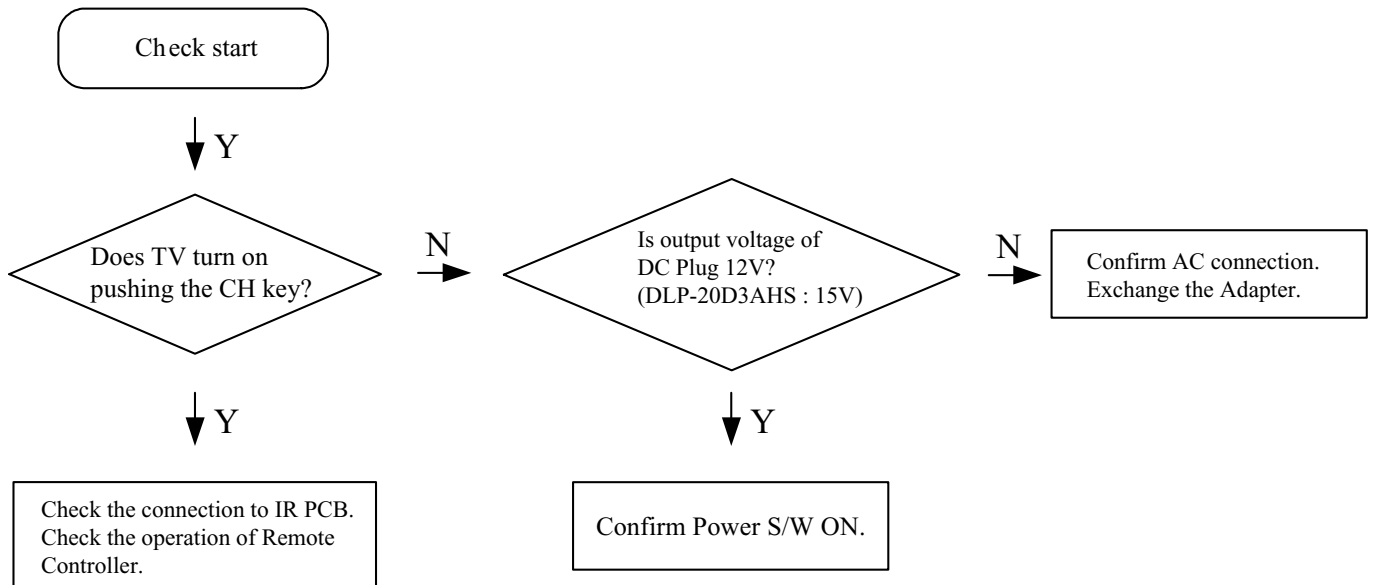
Trouble Shooting

8-1. When LED doesn't lit.

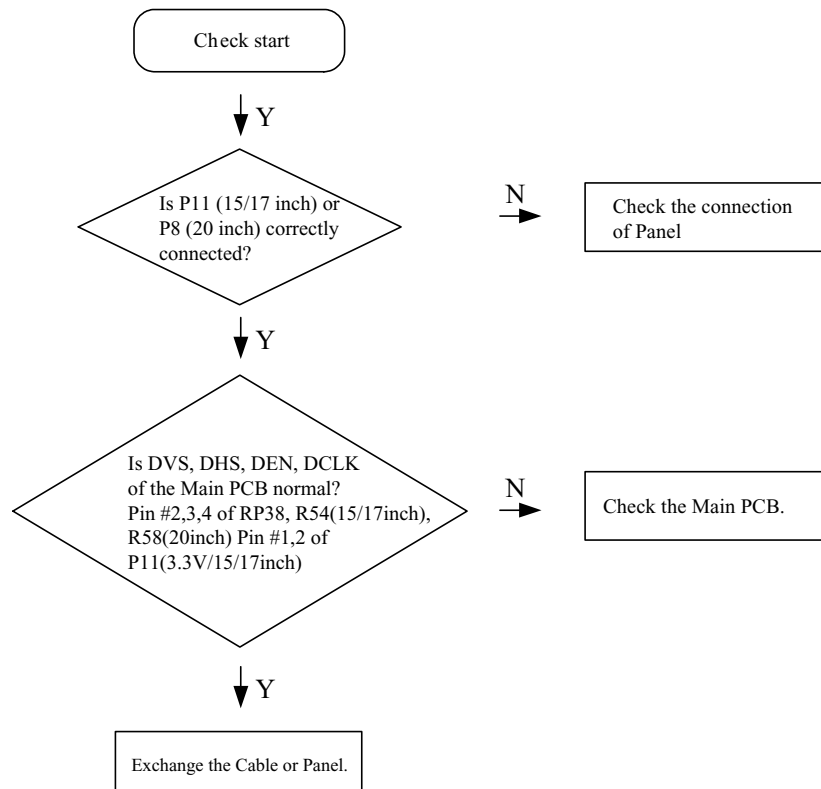


Trouble Shooting

8-2. When TV doesn't turn on in red LED.



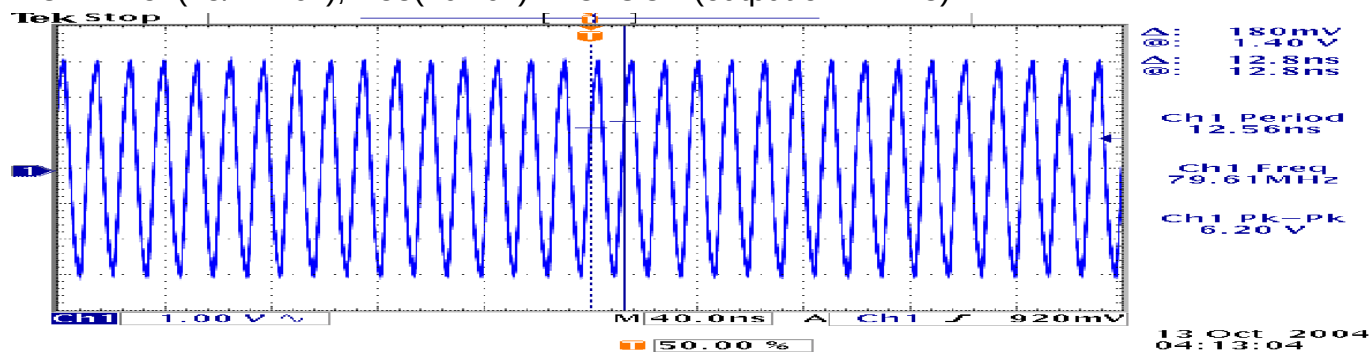
8-3. When "white screen".



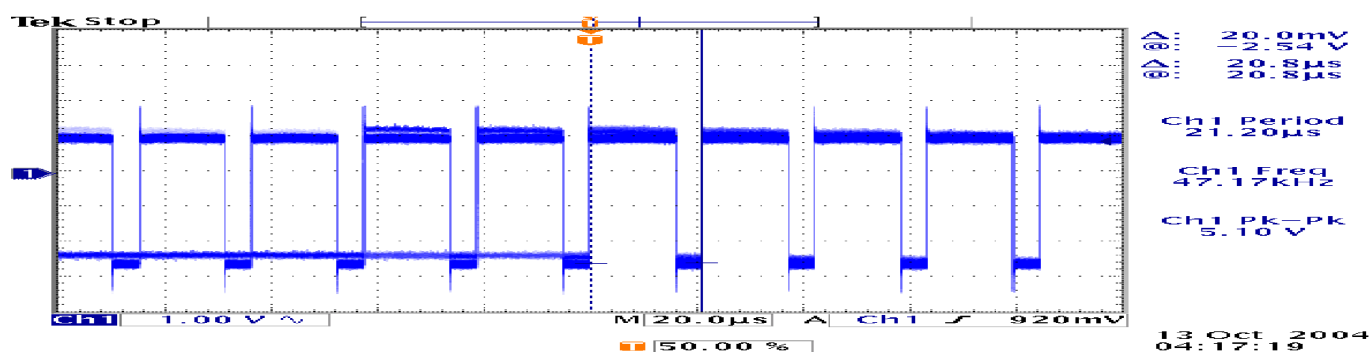
Trouble Shooting

DVS, DHS, DEN and DCLK signal
 <Pin #2,3,4 of RP38, R54(15/17inch), R58(20inch)>

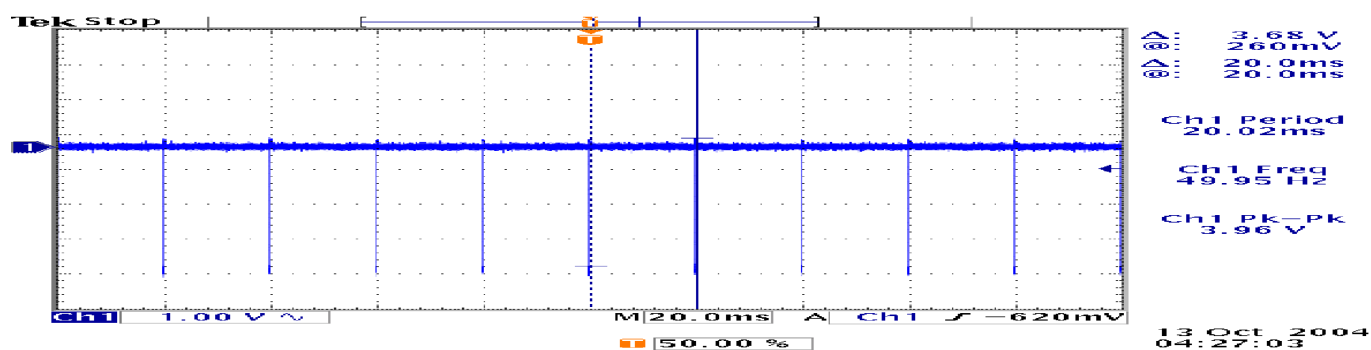
DCLK<R54(15/17inch), R58(20inch)> : CLOCK (output of PW113)



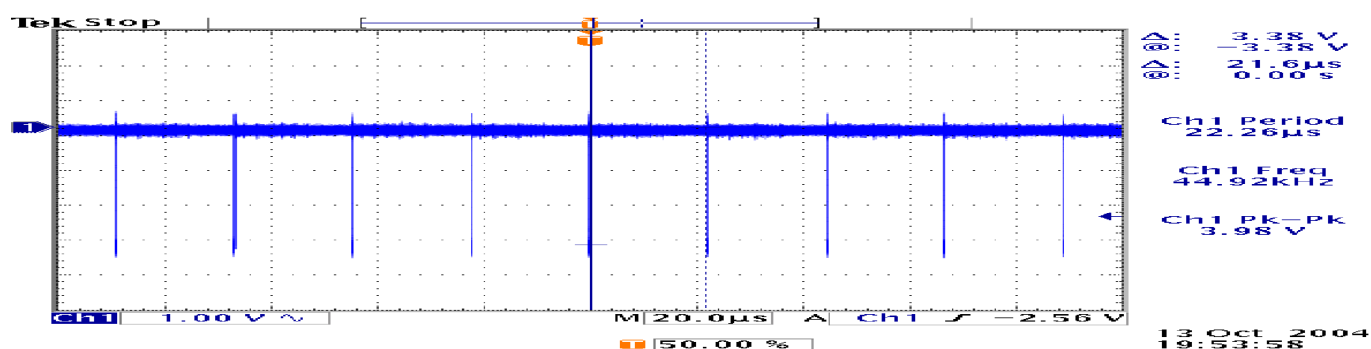
DEN(Pin#4 of RP38) : Data Enable(output of PW113)



DVS(Pin #2 of RP38): Vertical Sync(output of PW113)



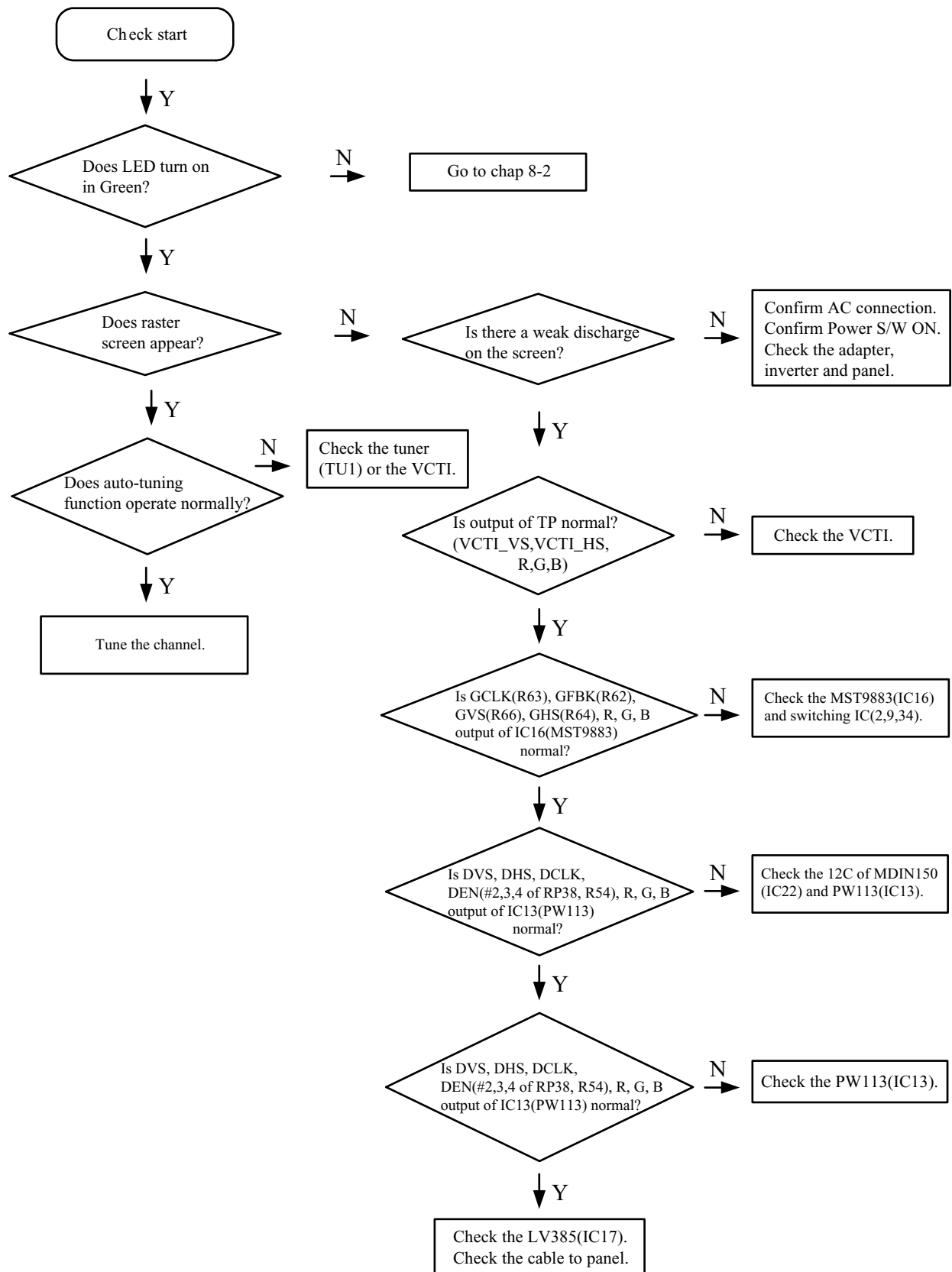
DHS(Pin #3 of RP38): Horizontal Sync (output of PW113)



If DCLK, DHS, DEN and DCLK signal is not normal, Main PCB has a trouble.
 -> Check the Main PCB.

Trouble Shooting

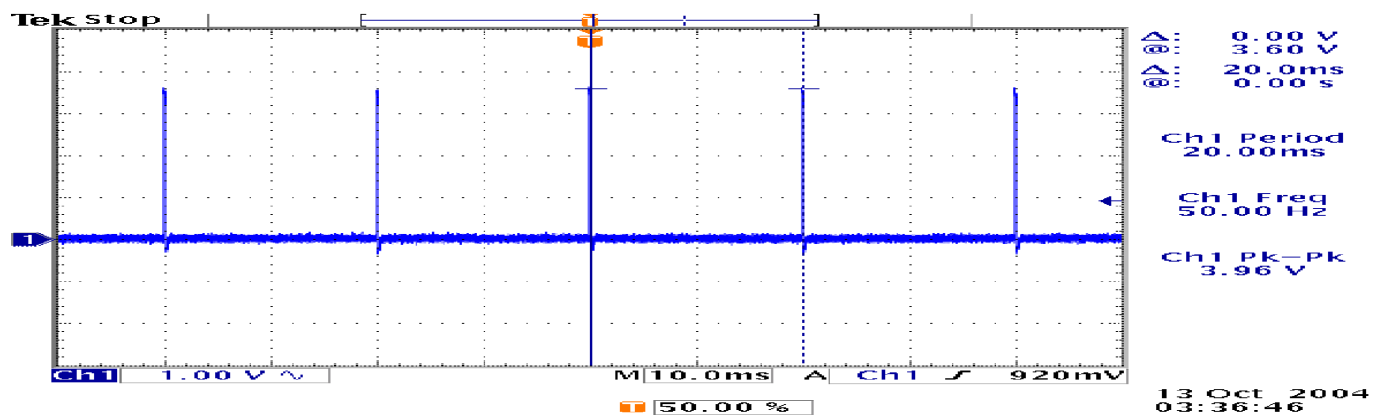
8-4. When “No picture” in TV mode.



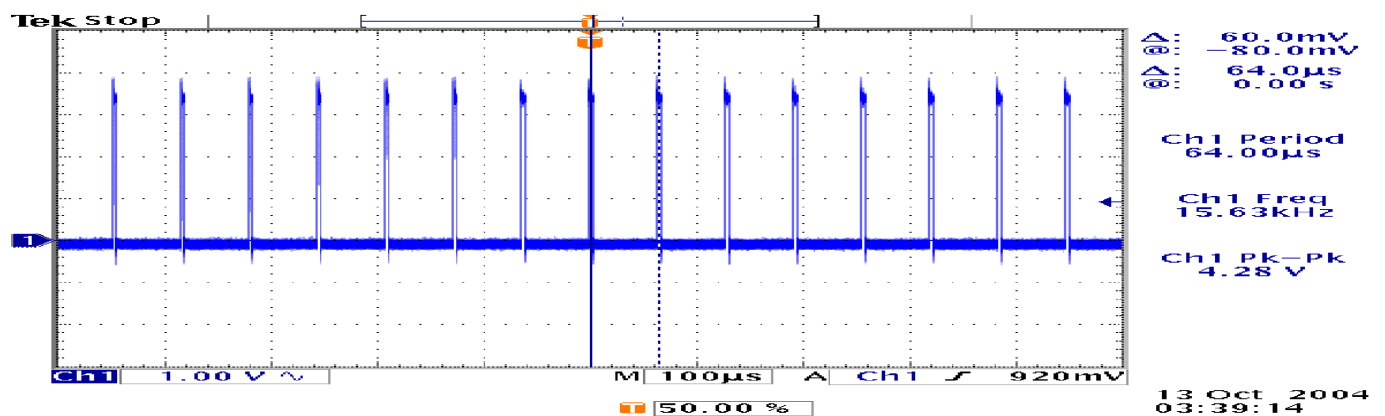
Trouble Shooting

VCTI <IC29>

VCTI_VS : Vertical Sync (output of VCTi)



VCTI_HS : Horizontal Sync (output of VCTi)



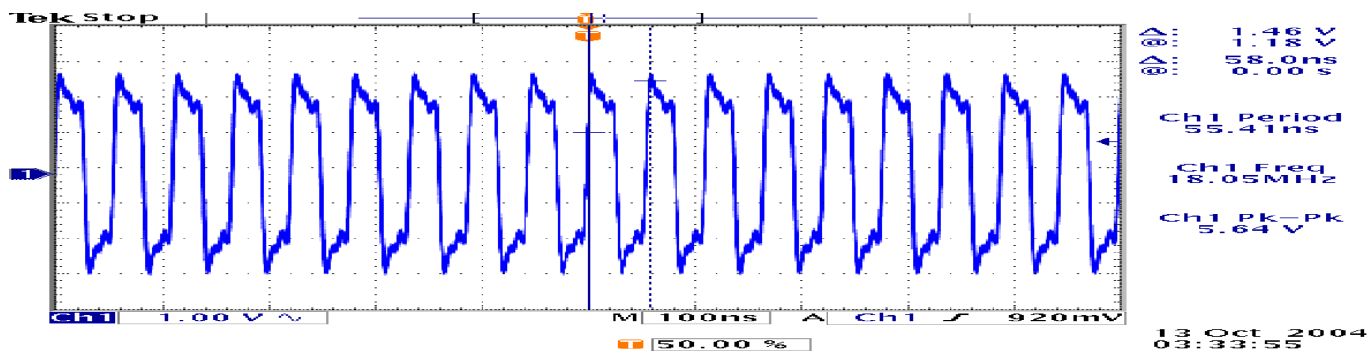
I2C (P13)



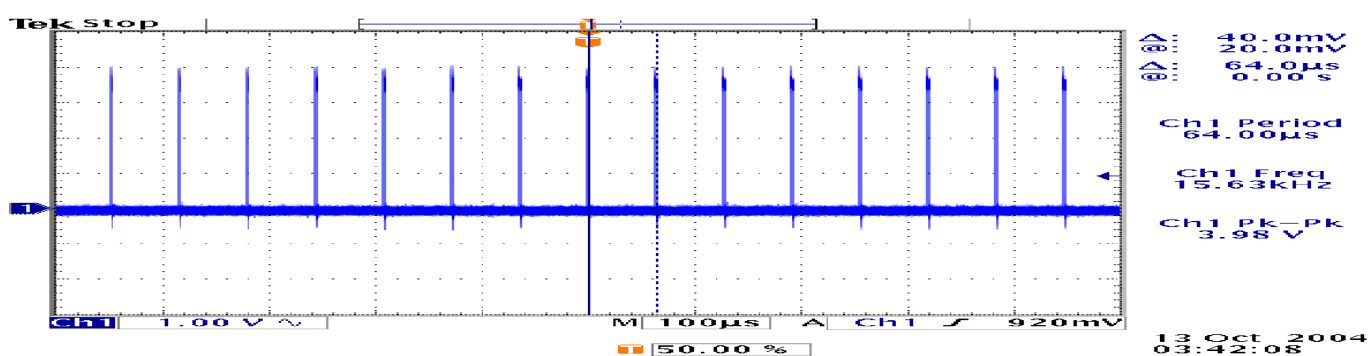
Trouble Shooting

MST9883 <IC16>

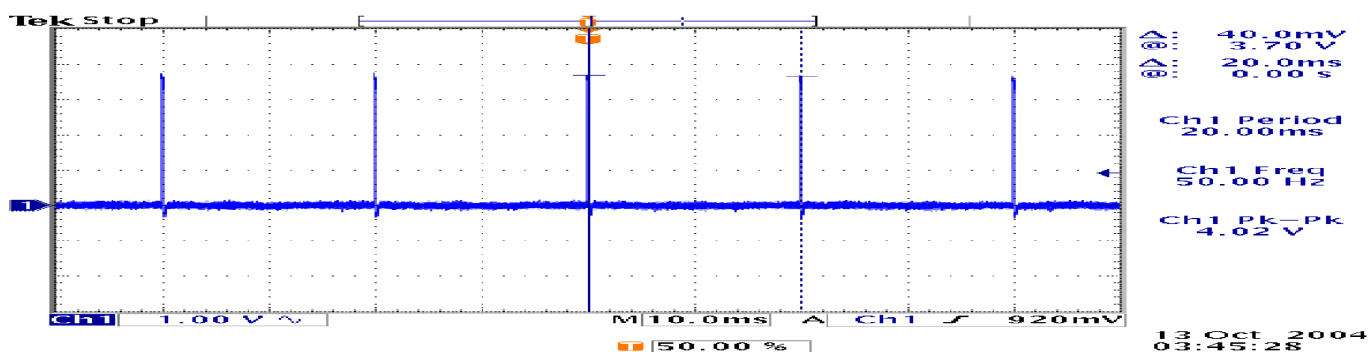
GCLK (R63) : CLOCK (output of MST9883)



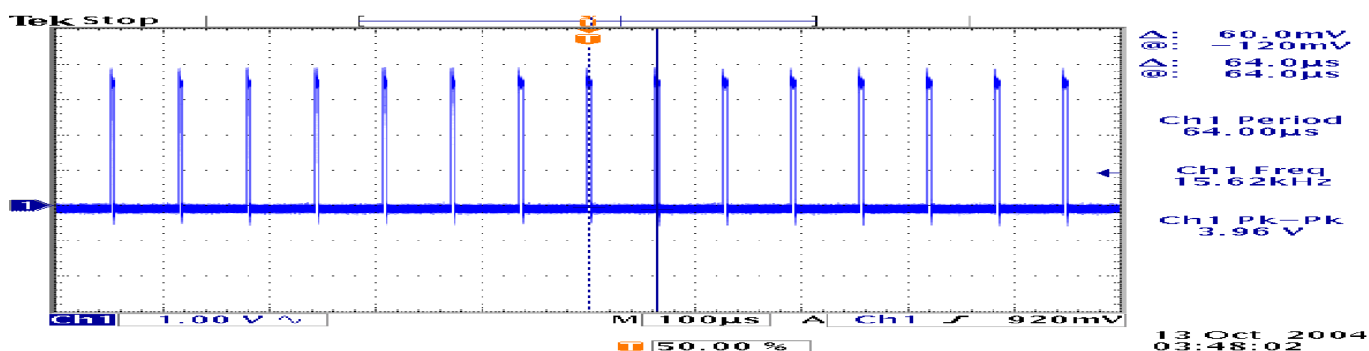
GCLK (R63) : CLOCK (output of MST9883)



GCLK (R63) : CLOCK (output of MST9883)



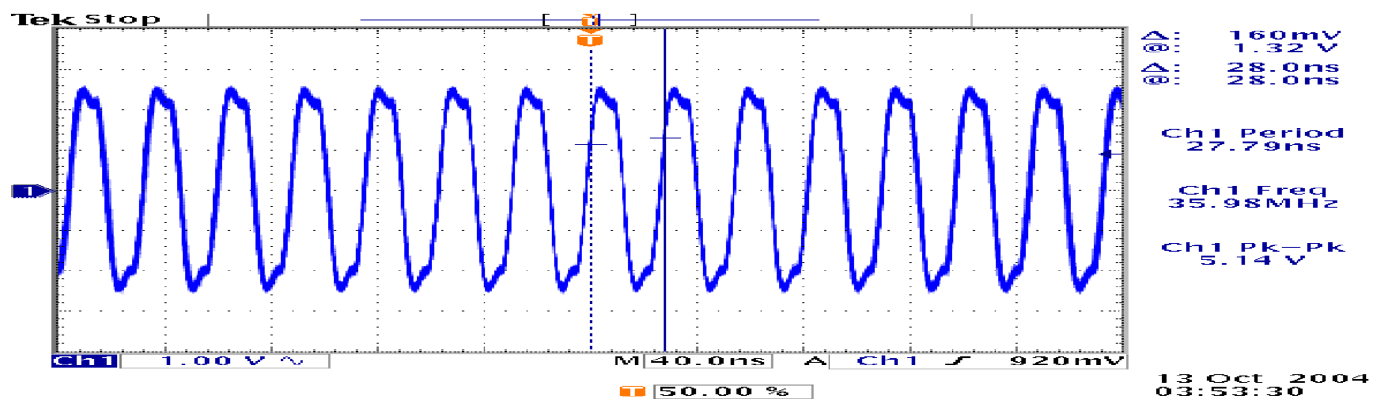
GCLK (R63) : CLOCK (output of MST9883)



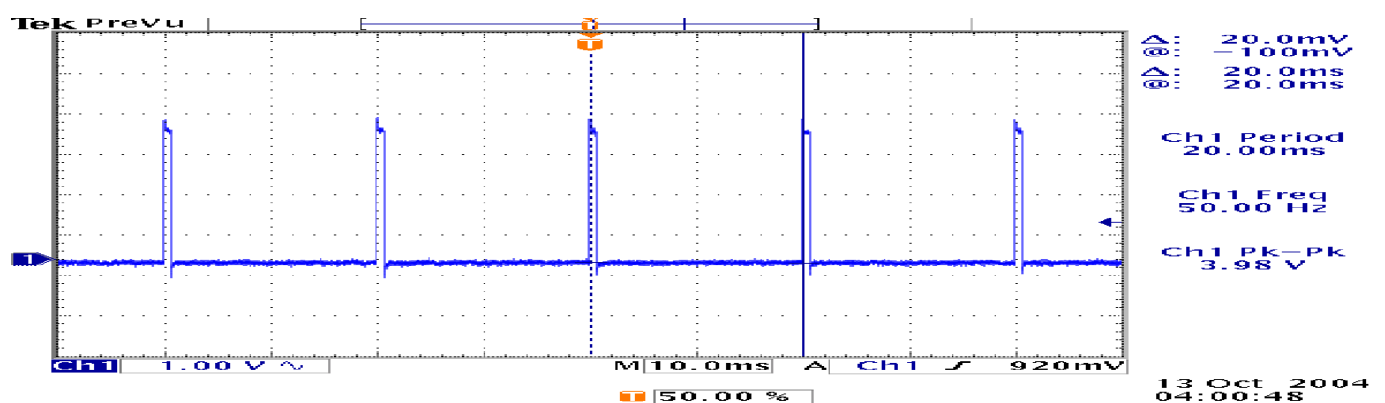
Trouble Shooting

MDIN <IC22>

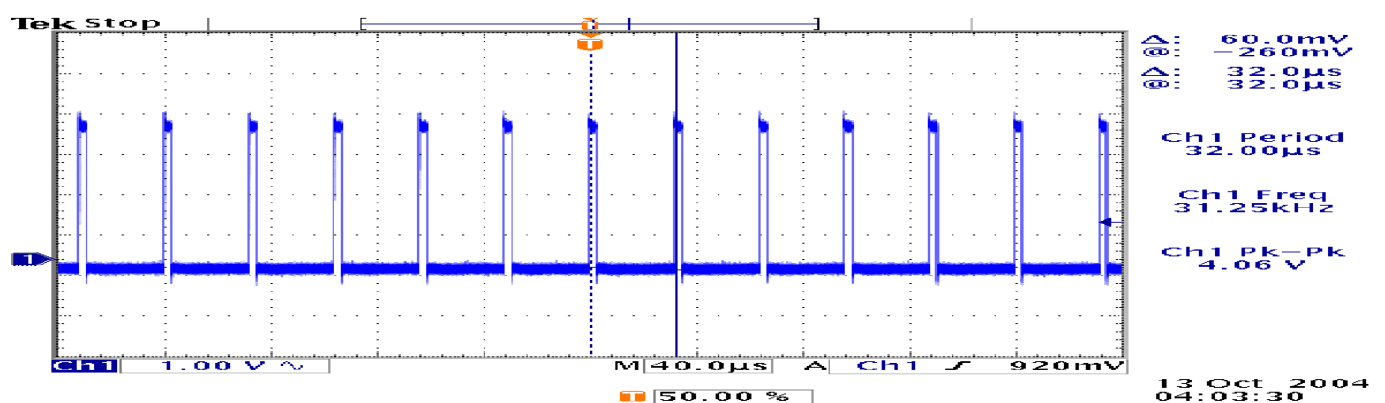
VCLK(R330,T8) : CLOCK (output of MDIN150)



VVS(#1 of RP1, T15) : Vertical Sync (output of MDIN150)

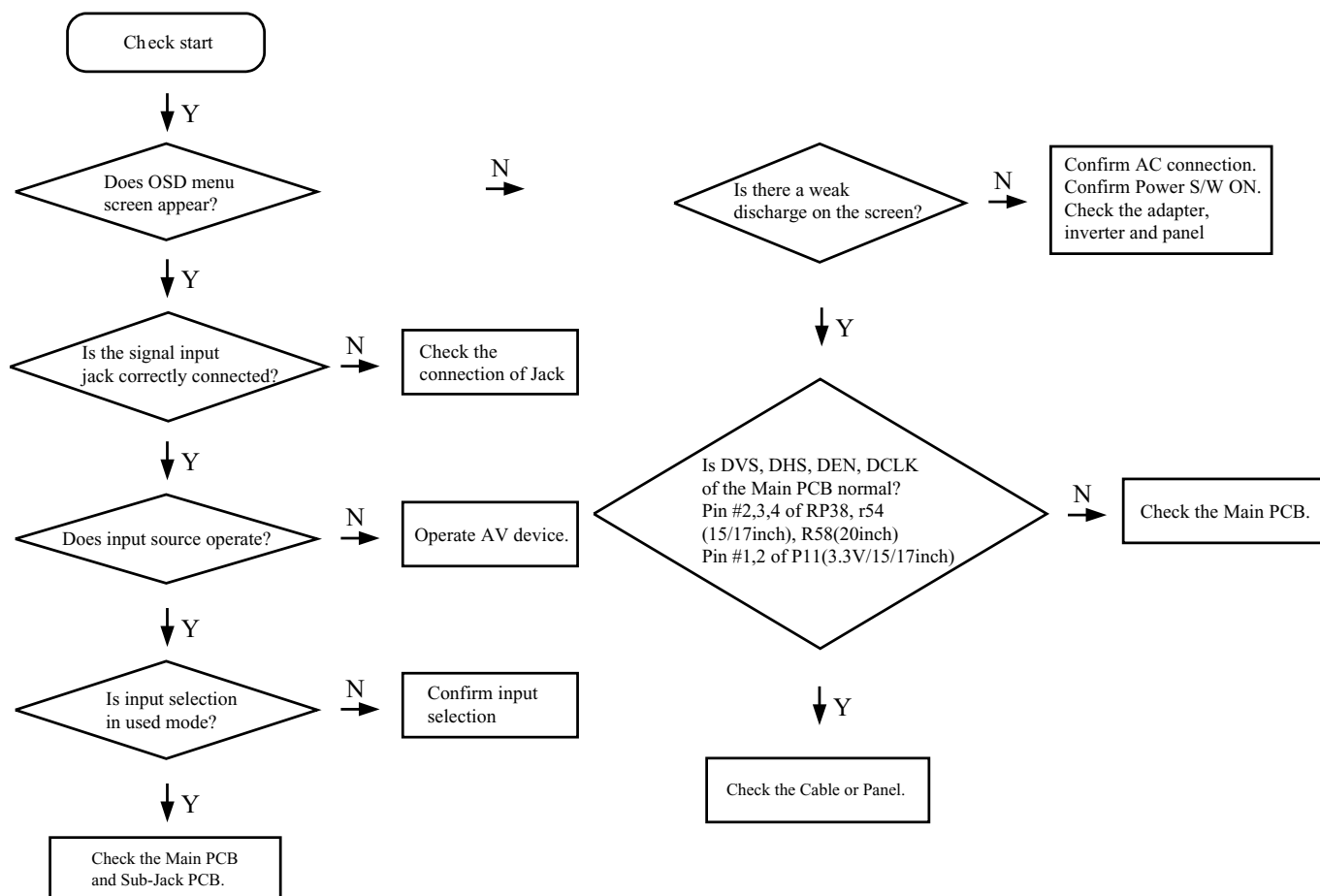


VVS(#1 of RP1, T15) : Vertical Sync (output of MDIN150)



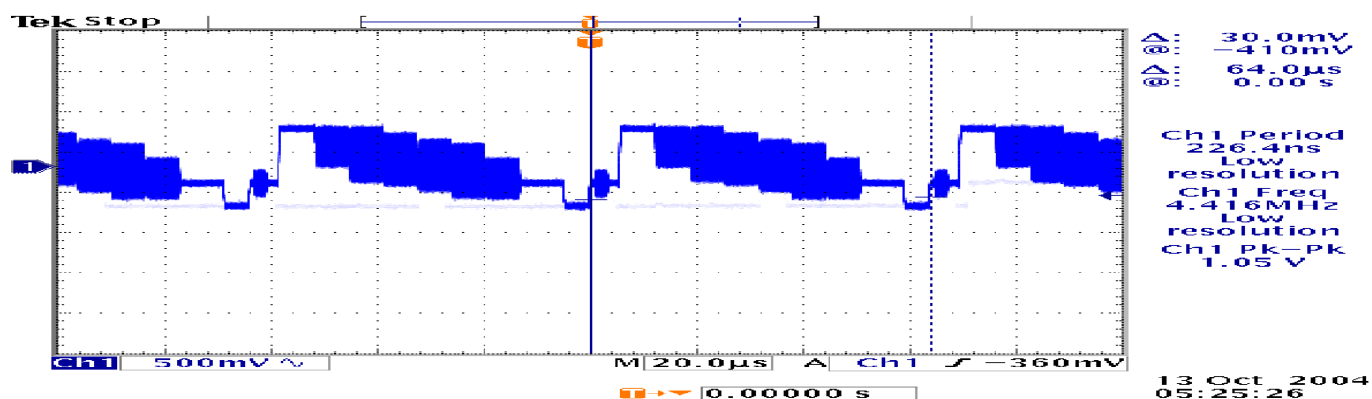
Trouble Shooting

8-5. When “No picture” in External input mode.



Trouble Shooting

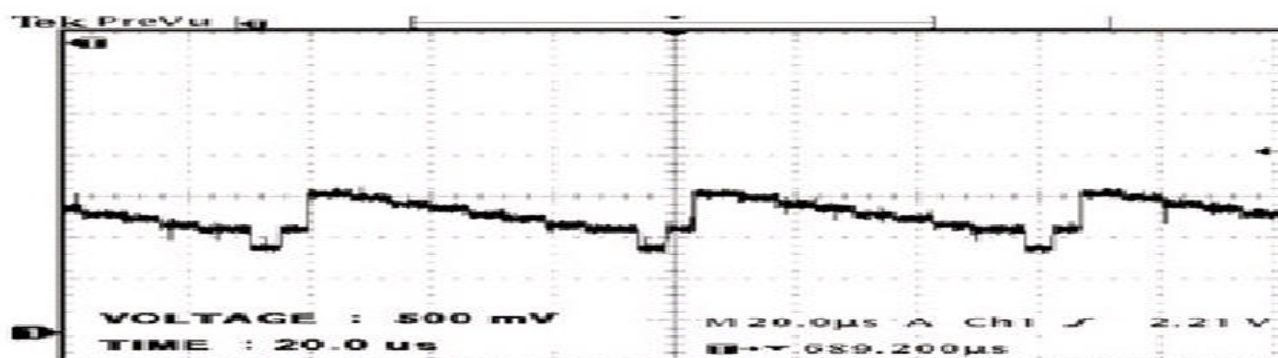
Input Video signal (color bar pattern) to COMPOSITE(AV2) and check 51th-pin signal of VCTI.



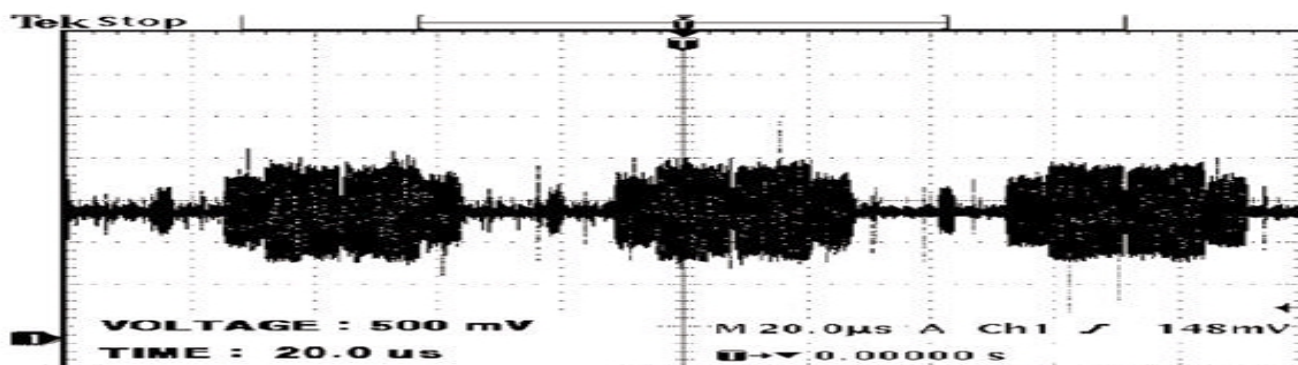
If no signal, sub-Jack PCB has a trouble. → Exchange sub-Jack PCB.

Input video signal (color bar pattern) to S-VIDEO and check 52th-pin signal and 53th-pin signal of VCTI.

52th-pin signal : Y signal



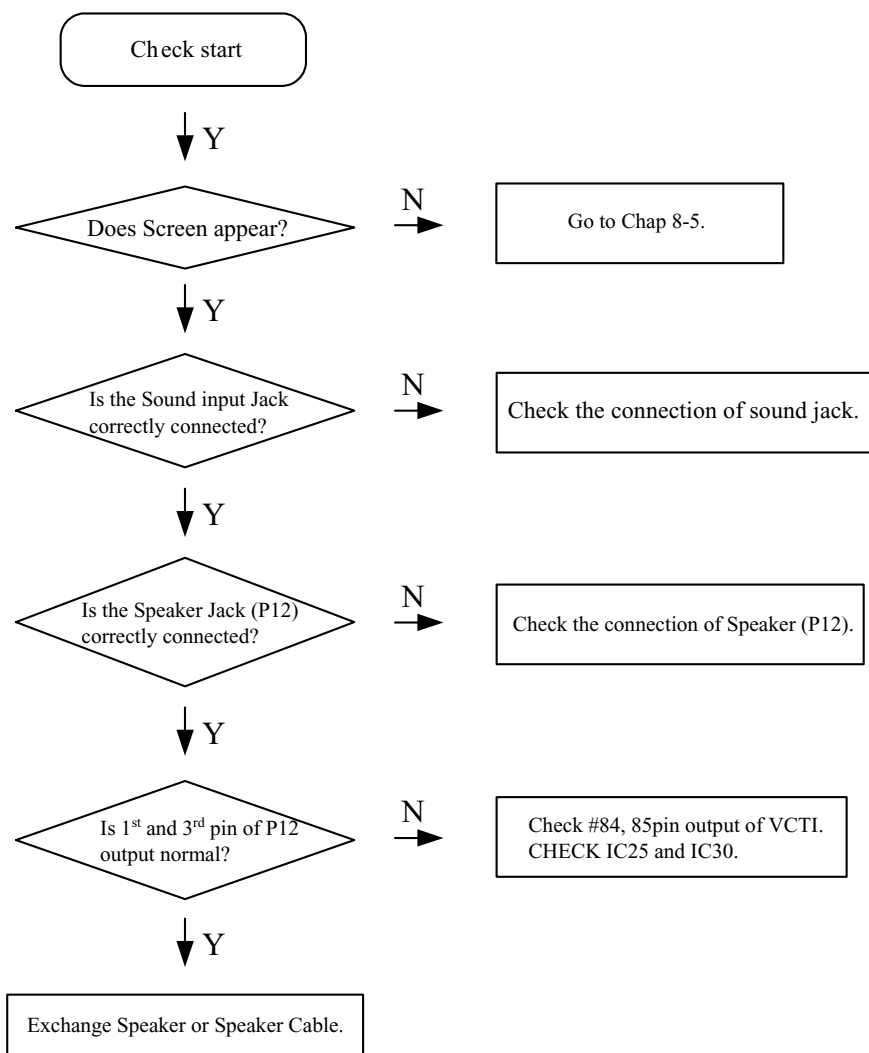
53th-pin signal : C signal



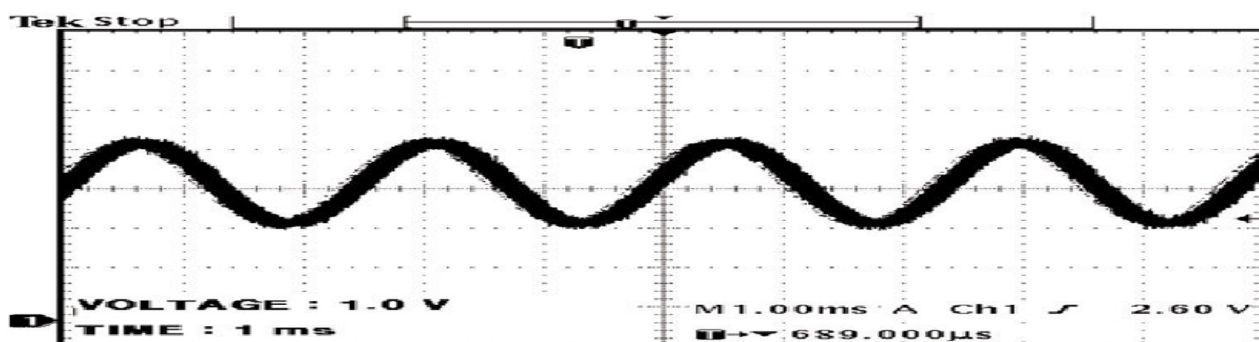
If no signal, sub-Jack PCB has a trouble. → Exchange sub-Jack PCB.

Trouble Shooting

8-6. When No Sound in External input mode.

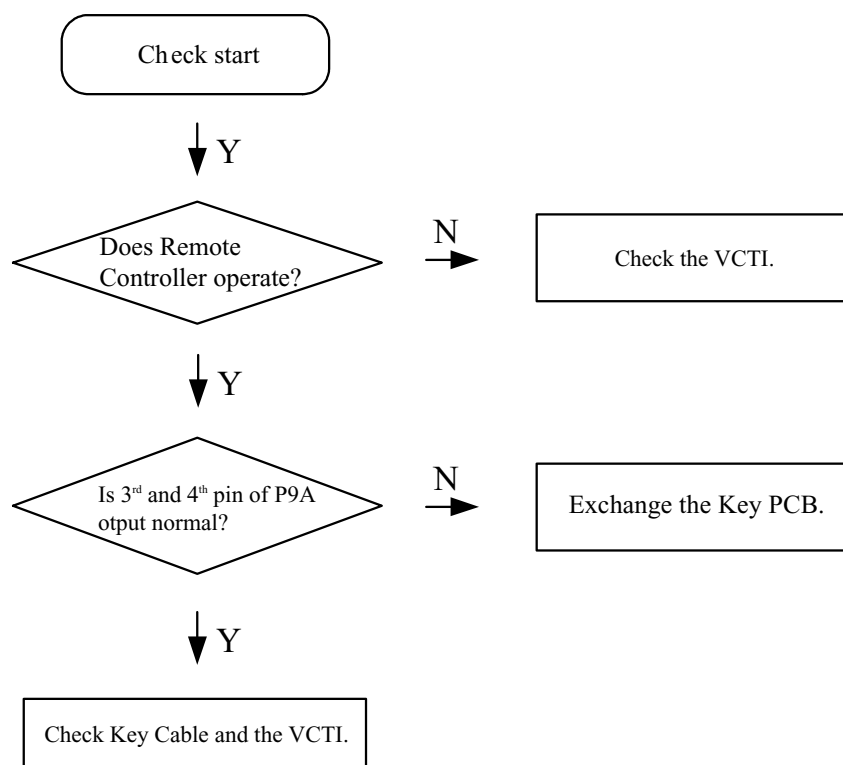


Check 1st and 3rd pin of P12 output (Input :1KHz Sine Signal)

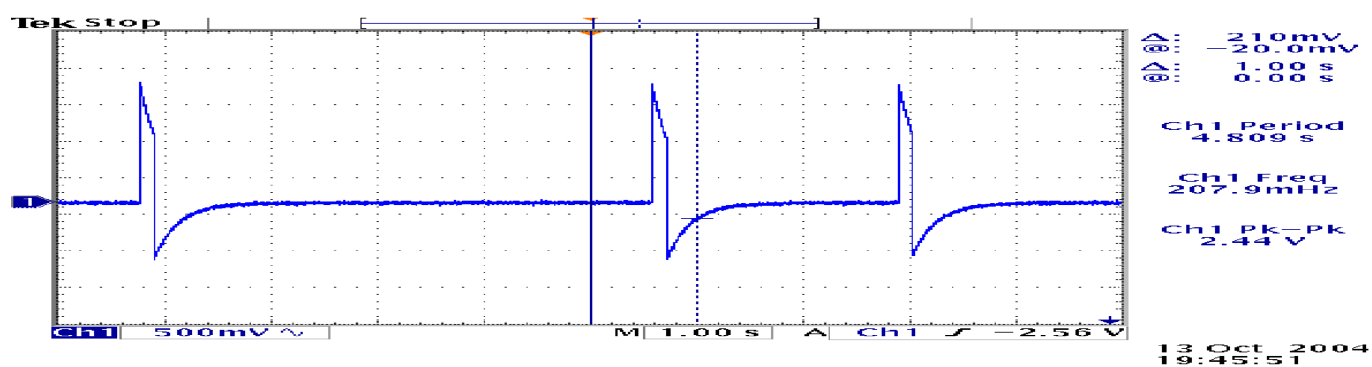


Trouble Shooting

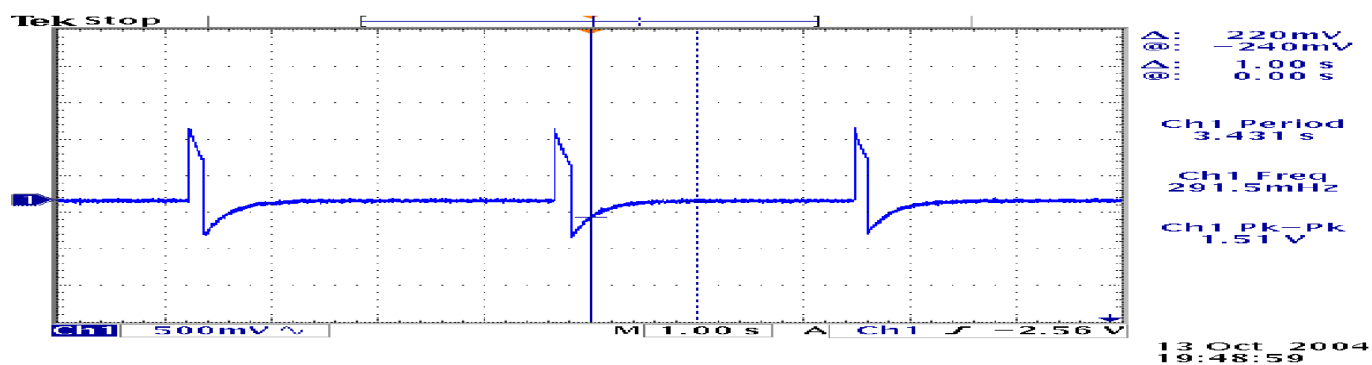
8-7. When Key does not operate.



Output of 3rd pin of P9A (Key1) : PCB for Key EX) Push “PR UP” key 3 times.

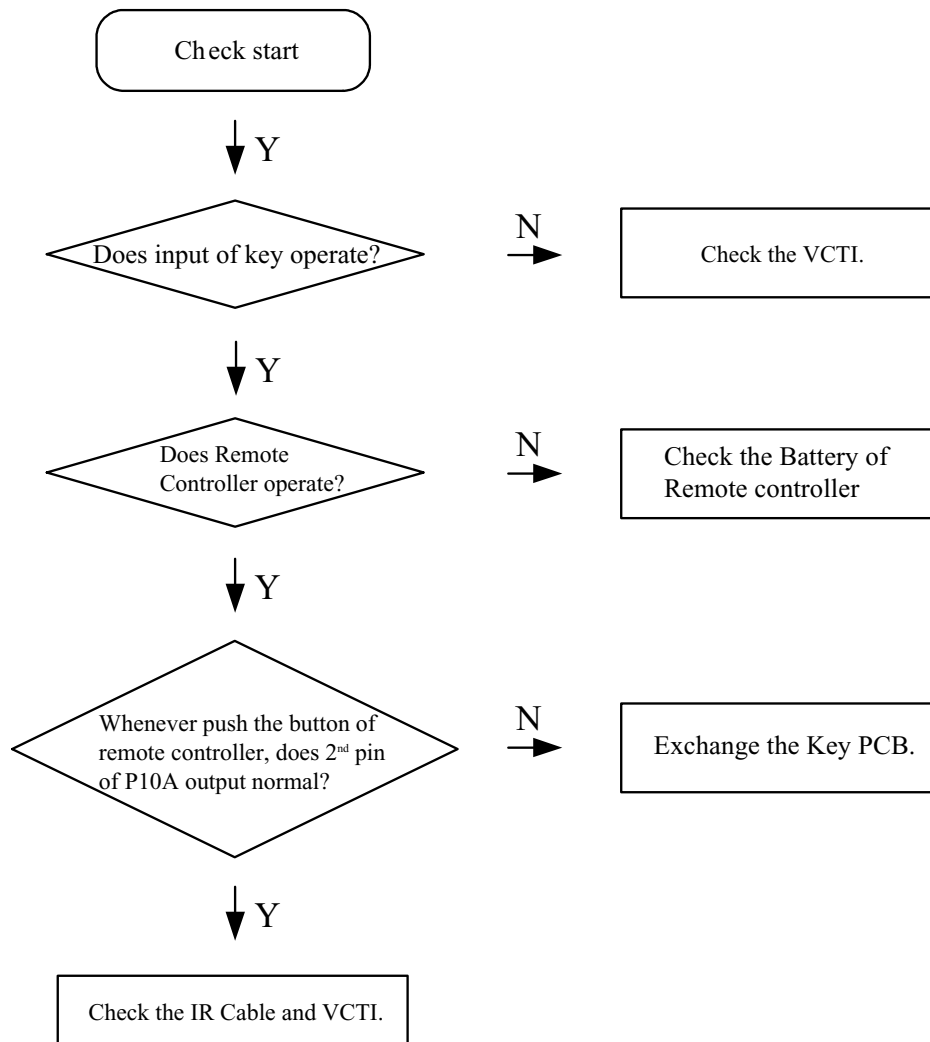


Output of 4th pin of P9A (Key2) : PCB for Key EX) Push “Menu” key 3 times.

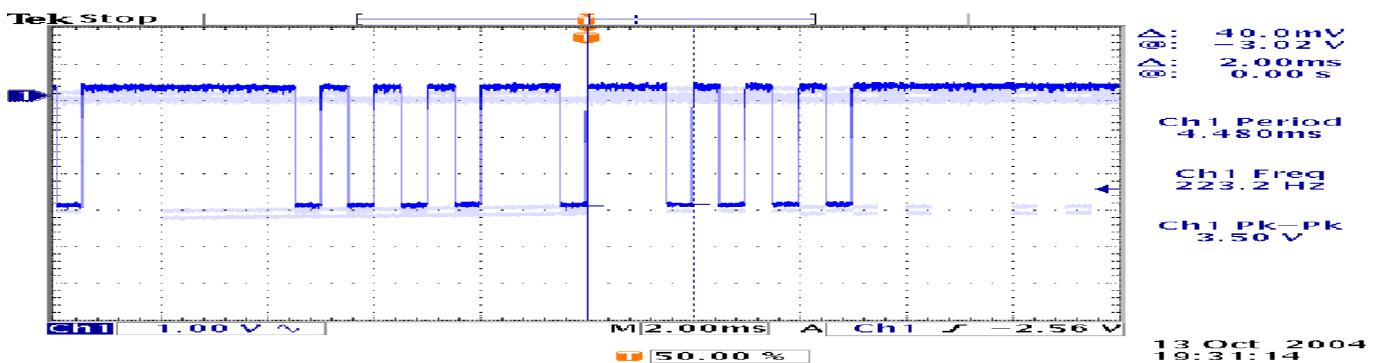


Trouble Shooting

8-8. When Remote Controller does not operate.



Output of 2nd pin of P10A (IR) : PCB for Remote Control EX) Push "PR DOWN" button.



9. Service part list

9-1. DLP-15D3SHS Service part list

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
ADT1	4859000840	ADAPTER	AP06312	
M124	485A101470	SHIELDRON	30X140X7.5T	
M125	485A101470	SHIELDRON	30X140X7.5T	
M126	485A101970	SHIELDRON	8X170X22T	
M127	485A102070	SHIELDRON	54X90X30T	
M128	485A102370	SHIELDRON	30X70X7.5T	
M150	4850K02200	CORE FERRITE	ZCAT1325-0530A	
M170	21500901SV	SHEET TAPE AL	T0.06 AL-35 70X40	
PA11	4859003060	CABLE LVDS AS	12507HS-20+1712LHS=140	
V901	485LD01156	LCD PANEL	LTM150XH-L06	
V902	4850M001NV	MODULE INVERTER	DS-1015WDS	
P601A	4850704S49	CONNECTOR	YH025-04+YRT205+YRT110+ ULW=800+200	
SP01	4858316610	SPEAKER	SP-4872N03	
SP02	4858316610	SPEAKER	SP-4872N03	
COM1	4859112750	JACK PIN	DPSE-0375 5PIN STR	
IC12	1TS0P34838	IC PREAMP	TSOP34838SJ	
IC25	1TDA1517PP	IC	TDA1517P	
IC29	149531PYFP	IC TV PROCESSORS	VCT49531-PY-F1	
IC30	1TDA1517PP	IC	TDA1517P	
IC31	124LC16B1B	IC MEMORY	24LC16B1B	
J2	4859295420	CONN WAFER	4602-04MV2-60-1 PLUG 4P ST	
J2A	4859295620	CONN WAFER	4605-2FV2-1 JUMPER 2P 2.54	
J2B	4859295620	CONN WAFER	4605-2FV2-1 JUMPER 2P 2.54	
J7	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J8	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JP1	4959200160	CONN D-SUB	SHF-015-B111-22/BR2-J0.6	
JP11	4859112950	JACK SCART	DSSM-0378 STR	
JP2	4859113050	JACK DC	DDSE-9861R STR	
JP4	97P6316100	JACK HEAD PHONE	DHSE-9959	
JP5	4859105340	JACK S-VHS	DSW-10 (STRAIGHT)	
JP7	4959102340	JACK PHONE	YKB21-5157	
JP8	4859112850	JACK PIN	DPSS-0173 3PIN STR	
L46	58C0000116	COIL BEAD	HC-3550R	
L48	58C0000116	COIL BEAD	HC-3550R	
LED1	DHL320CRGD	LED	HL-L320CRGD	
M100	4857253700	SHIELD COVER	SPTH-C T0.3	
M100A	485A100870	SHIELDRON	40X60X16T	
M110	4857253800	SHIELD PLATE	SPTH-C T0.3	
M110A	485A100670	SHIELDRON	40X60X4T	
M123	485A101170	SHIELDRON	12X18X8T	
P12	4859236120	CONN WAFER	YAW025-04	
P13	4859231620	CONN WAFER	YW025-03	
P4	485923172S	CONN WAFER	YW025-04 (STICK)	
PA10	4850706S26	CONNECTOR	12505HS-06+12505HS-06+ULW=500	
PA3	4850712S01	CONNECTOR	12505HS-12+12505HS-12+ULW=100	
PA6	4850714S01	CONNECTOR	12505HS-14+12505HS-14+ULW=160	
PA9	4850705S17	CONNECTOR	12505HS-05+12505HS-05+ULW=270	
S3	5PX6966D—	FILTER SAW	X6966D	
SW1	5S50101Z90	SW TACT	THVV502GDA	
SW2	5S50101Z90	SW TACT	THVV502GDA	
loc	parts code	parts name	parts_descr	
SW3	5S50101Z90	SW TACT	THVV502GDA	
SW4	5S50101Z90	SW TACT	THVV502GDA	
SW5	5S40101009	SW PUSH	PS-22E06	
SW6	5S50101Z90	SW TACT	THVV502GDA	
SW7	5S50101Z90	SW TACT	THVV502GDA	
TU2	4850A23840	ANT SHIELD BOX	PAXBFO1DA (PAL)	
TU21A	485A101070	SHIELDRON	40X30X10T	
X1	5XJ20R25AE	CRYSTAL QUARTZ	HC-49/S 20.2500MHZ 16PF 30PPM	
X4	5XJ14R31AE	CRYSTAL QUARTZ	HC-49/S 14.31818MHZ 30PPM	
X5	5XJ27R00AC	CRYSTAL QUARTZ	HC-49/S 27.000MHZ 15PF 20PPM	
C103	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C104	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C106	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C107	HCQK120JBA	C CHIP CERA	50V CH 12PF J 1608	
C109	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C11	HCQK120JBA	C CHIP CERA	50V CH 12PF J 1608	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C110	HCFF334ZBA	C CHIP CERA	16V Y5V 0.33MF Z 1608	
C111	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C112	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C117	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C118	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C12	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C120	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C121	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C122	HCFF334ZBA	C CHIP CERA	16V Y5V 0.33MF Z 1608	
C123	HCBK821KBA	C CHIP CERA	50V X7R 820PF K 1608	
C127	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C128	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C129	HCBK821KBA	C CHIP CERA	50V X7R 820PF K 1608	
C13	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C131	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C134	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C135	HCQK120JBA	C CHIP CERA	50V CH 12PF J 1608	
C139	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C14	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C142	HCQK120JBA	C CHIP CERA	50V CH 12PF J 1608	
C144	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C147	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C148	HCBK152KBA	C CHIP CERA	50V X7R 1500PF K 1608	
C154	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C157	HCBK822KBA	C CHIP CERA	50V X7R 8200PF K 1608	
C158	HCBK822KBA	C CHIP CERA	50V X7R 8200PF K 1608	
C160	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C161	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C162	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C163	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C165	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C166	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C167	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C169	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
loc	parts code	parts name	parts_descr	
C17	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C172	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C174	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C175	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C176	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C177	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C183	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C185	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C189	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C19	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C190	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C192	HCQK180JBA	C CHIP CERA	50V CH 18PF J 1608	
C193	HCQK180JBA	C CHIP CERA	50V CH 18PF J 1608	
C194	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C195	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C196	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C197	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C198	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C199	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C2	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C20	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C200	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C201	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C202	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C207	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C208	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C21	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C210	HCQK331JBA	C CHIP CERA	50V CH 330PF J 1608	
C211	HCQK331JBA	C CHIP CERA	50V CH 330PF J 1608	
C215	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C218	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C219	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C221	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	

Service part list

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
D23	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D32	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D33	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D36	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D37	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D38	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D39	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D40	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D41	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D42	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D43	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D45	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
L86	HLC479J00A	L CHIP COIL	4.7UH MLF2012	
Q12	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
R1	HRFT155JBA	R CHIP	1/10 1.5M OHM J 1608	
R10	HRFT201JBA	R CHIP	1/10 200 OHM J 1608	
R100	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R101	HRFT333JBA	R CHIP	1/10 33K OHM J 1608	
R102	HRFT223JBA	R CHIP	1/10 22K OHM J 1608	
R107	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R108	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
R109	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
R110	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R112	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R121	HRFT241JBA	R CHIP	1/10 240 OHM J 1608	
R122	HRFT241JBA	R CHIP	1/10 240 OHM J 1608	
R123	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R128	HRFT123JBA	R CHIP	1/10 12K OHM J 1608	
R130	HRFT242JBA	R CHIP	1/10 2.4K OHM J 1608	
R131	HRFT431JBA	R CHIP	1/10 430 OHM J 1608	
R14	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R140	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R141	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R156	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
loc	parts code	parts name	parts descr	
R157	HRFT331JBA	R CHIP	1/10 330 OHM J 1608	
R158	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R159	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R161	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R164	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R166	HRFT331JBA	R CHIP	1/10 330 OHM J 1608	
R18	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R185	HRFT106JBA	R CHIP	1/10 10M OHM J 1608	
R186	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R189	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R191	HRFT331JBA	R CHIP	1/10 330 OHM J 1608	
R196	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R203	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R204	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R205	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R206	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R21	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R210	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R211	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R212	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R229	HRFT512JBA	R CHIP	1/10 5.1K OHM J 1608	
R230	HRFT682JBA	R CHIP	1/10 6.8K OHM J 1608	
R234	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R235	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R236	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R237	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R238	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R239	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R24	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R243	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R244	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R245	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R246	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R247	HRFT152JBA	R CHIP	1/10 1.5K OHM J 1608	
R248	HRFT152JBA	R CHIP	1/10 1.5K OHM J 1608	
R249	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R25	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R250	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R254	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R257	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R258	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R259	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R261	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R262	HRFT562JBA	R CHIP	1/10 5.6K OHM J 1608	
R263	HRFT562JBA	R CHIP	1/10 5.6K OHM J 1608	
R264	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R27	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R272	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R273	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R277	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
loc	parts code	parts name	parts descr	
R283	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R284	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R285	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R288	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R289	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R291	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R292	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R293	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R298	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R304	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
R305	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
R308	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R309	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R31	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R314	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R315	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R316	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R317	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R318	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R33	HRFT153JBA	R CHIP	1/10 15K OHM J 1608	
R330	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R332	HRFT152JBA	R CHIP	1/10 1.5K OHM J 1608	
R333	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R335	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R336	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R34	HRFT393JBA	R CHIP	1/10 39K OHM J 1608	
R35	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R36	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R37	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R38	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R39	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R4	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R40	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R41	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R42	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R53	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R54	HRFT560JBA	R CHIP	1/10 56 OHM J 1608	
R55	HRFT201JBA	R CHIP	1/10 200 OHM J 1608	
R56	HRFT201JBA	R CHIP	1/10 200 OHM J 1608	
R59	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R60	HRFT392JBA	R CHIP	1/10 3.9K OHM J 1608	
R61	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R63	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R65	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R67	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R69	HRFT564JBA	R CHIP	1/10 560K OHM J 1608	
R7	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R71	HRFT153JBA	R CHIP	1/10 15K OHM J 1608	
R72	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R79	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
loc	parts code	parts name	parts descr	
R80	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R82	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R83	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R90	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R96	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
A001	4859804996	PCB MAIN	260X234 G4V	
C1	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C10	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C100	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C101	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C102	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C105	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C108	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C114	HCELC102ME	C CHIP ELECTRO	25V 10MF CM 4052	
C115	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C116	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C119	HCELC102ME	C CHIP ELECTRO	25V 10MF CM 8063	
C124	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C125	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C130	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C132	HCELC220MC	C CHIP ELECTRO	50V 22MF CM 6353	
C133	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C138	HCELC479MC	C CHIP ELECTRO	50V 4.7MF CM 4052	
C140	HCELC479MC	C CHIP ELECTRO	50V 4.7MF CM 4052	
C141	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C145	HCELC102ME	C CHIP ELECTRO	25V 10MF CM 8063	
C146	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
C15	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C150	HCELC221ME	C CHIP ELECTRO	25V 22MF CM 8010	
C155	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C156	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C16	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C164	HCQK221JBA	C CHIP CERA	50V CH 220PF J 1608	
C168	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
C170	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C173	HCELF470MC	C CHIP ELECTRO	16V 47MF CM 5053	
C178	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C179	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C18	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C180	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C181	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C182	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C184	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C186	HCQK221JBA	C CHIP CERA	50V CH 220PF J 1608	
C187	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C188	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C203	HCELC479MC	C CHIP ELECTRO	50V 4.7MF CM 4052	
C204	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C206	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C209	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
loc	parts code	parts name	parts descr	
C212	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C213	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C214	HCELF470MC	C CHIP ELECTRO	16V 47MF CM 5053	
C216	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C217	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C22	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C220	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C226	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C227	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C23	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C231	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C239	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C25	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C250	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C253	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C256	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C260	HCELF470MC	C CHIP ELECTRO	16V 47MF CM 5053	
C261	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C267	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C27	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C273	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C275	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C281	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C282	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C283	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C287	HCELF470MC	C CHIP ELECTRO	16V 47MF CM 5053	
C288	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C289	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C29	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C291	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C294	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C298	HCELC221ME	C CHIP ELECTRO	25V 22MF CM 8010	
C299	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C3	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C30	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C300	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C301	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C303	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C304	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C305	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C306	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C307	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C309	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C314	HCELC479MC	C CHIP ELECTRO	50V 4.7MF CM 4052	
C315	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C316	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C317	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C319	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C320	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C321	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
loc	parts code	parts name	parts descr	
C322	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C331	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C332	HCELF470MC	C CHIP ELECTRO	16V 47MF CM 5053	
C335	HCELF471ME	C CHIP ELECTRO	16V 470MF CM 8010	
C336	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C337	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C338	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C339	HCELC220MC	C CHIP ELECTRO	50V 22MF CM 6353	
C340	HCELC479MC	C CHIP ELECTRO	50V 4.7MF CM 4052	
C342	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C343	HCELC479MC	C CHIP ELECTRO	50V 4.7MF CM 4052	
C349	HCELF470MC	C CHIP ELECTRO	16V 47MF CM 5053	
C353	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C356	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C357	HCELF220MD	C CHIP ELECTRO	16V 22MF CM 4052	
C37	HCBK473KBA	C CHIP CERA	50V X7R 0.047MF K 1608	
C38	HCBK473KBA	C CHIP CERA	50V X7R 0.047MF K 1608	
C384	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C385	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C39	HCQK331JBA	C CHIP CERA	50V CH 330PF J 1608	
C4	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C40	HCQK331JBA	C CHIP CERA	50V CH 330PF J 1608	
C41	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	
C48	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C51	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C52	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
C61	HCQK221JBA	C CHIP CERA	50V CH 220PF J 1608	
C65	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
C66	HCBK473KBA	C CHIP CERA	50V X7R 0.047MF K 1608	
C69	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C71	HCELC102ME	C CHIP ELECTRO	6.3V 1000MF CM 8010	
C9	HCELC100MC	C CHIP ELECTRO	25V 10MF CM 4052	
C92	HCELC101MD	C CHIP ELECTRO	25V 10MF CM 8063	

Service part list

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C96	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
D10	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D15	DM2FM3—C	DIODE CHIP SCHOTTKY	M2FM3 M2F TYPE	
D16	DBAV99L—B	DIODE CHIP	BAV99L	
D24	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D25	DBAV99L—B	DIODE CHIP	BAV99L	
D26	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D27	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D28	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D29	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D3	DBAV99L—B	DIODE CHIP	BAV99L	
D30	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D31	DZ02W5R6VA	DIODE CHIP ZENER	Z02W5.6V	
D34	DBAV99L—B	DIODE CHIP	BAV99L	
D4	DBAV99L—B	DIODE CHIP	BAV99L	
D5	DBAV99L—B	DIODE CHIP	BAV99L	
D50	DM2FM3—C	DIODE CHIP SCHOTTKY	M2FM3 M2F TYPE	
loc	parts code	parts name	parts descr	
D6	DBAV99L—B	DIODE CHIP	BAV99L	
D7	DBAV99L—B	DIODE CHIP	BAV99L	
D8	DBAV99L—B	DIODE CHIP	BAV99L	
D9	DBAV99L—B	DIODE CHIP	BAV99L	
IC1	1A1117E33D	IC CHIP REGULATOR	AP1117E33A 3.3V 2% SOT-223	
IC10	1A1117E33D	IC CHIP REGULATOR	AP1117E33A 3.3V 2% SOT-223	
IC11	1VF800A70Q	IC CHIP FLASH	SST39VF800A-70 4C-EK TRAY	
IC13	1PW11310QQ	IC CHIP IMAGE PROCESSOR	PW113-10Q	
IC14	1S18033SDE	IC CHIP SW REG	SI-8033SD 3.0A 3.3V 60KHZ 5PIN	
IC15	1A1117E18D	IC CHIP REGULATOR	AP1117E18A 1.8V 2% SOT-223	
IC16	19883C110Q	IC CHIP ADC	MST9883CR-110 MSPS	
IC17	1ELLV385-E	IC CHIP	EL-LV385	
IC18	1A1117E33D	IC CHIP REGULATOR	AP1117E33A 3.3V 2% SOT-223	
IC19	1A1117EA-D	IC CHIP REGULATOR	AP1117EA ADJ 2% SOT-223	
IC2	1CD74HC52D	IC CHIP LOGIC	CD74HC4052M SOIC 16 REEL	
IC20	1S18050SDE	IC CHIP SW REG	SI-8050SD 3.0A 5.0V 60KHZ 5PIN	
IC21	1A1117E18D	IC CHIP REGULATOR	AP1117E18A 1.8V 2% SOT-223	
IC22	1MD1N150LQ	IC CHIP HD DEINTERLACER	MDIN-150L	
IC23	12S32200BQ	IC CHIP	IS42S32200B-6T	
IC24	1P3J17CM-E	IC CHIP REGULATOR	P3J17CM	
IC26	1CXA1315MD	IC CHIP D/A	CXA1315M	
IC3	124LC22A-C	IC CHIP EEPROM	24LC22AT-1SN SOIC8 REEL	
IC33	1CD74HC52D	IC CHIP LOGIC	CD74HC4052M SOIC 16 REEL	
IC34	1P15V330-D	IC CHIP VIDEO SWITCH	PI5V330	
IC35	1BA6161F-C	IC CHIP SW REG	BA6161F 30-35V 100KHZ SOP8 REEL	
IC36	1K1A4558FC	IC AMP	KIA4558F	
IC38	124LC168TC	IC CHIP EEPROM	24LC168T-1SN 16K 8 PIN SOIC REEL	
IC39	TFDS4953-C	FET CHIP	FDS4953 SO-8 -30V -5A REEL	
IC4	1K1A358F-C	IC CHIP OP AMP	KIA358F DUAL OP AMP FLP-8	
IC40	1V273APWRD	IC CHIP LOGIC	SN74LV273APWR	
IC5	1P15V330-D	IC CHIP VIDEO SWITCH	PI5V330	
IC6	1A1117E33D	IC CHIP REGULATOR	AP1117E33A 3.3V 2% SOT-223	
IC7	1K1A7027TB	IC CHIP RESET	KIA7027AT 2.7V TSM TYPE	
IC8	TFDS4953-C	FET CHIP	FDS4953 SO-8 -30V -5A REEL	
IC9	1P15V330-D	IC CHIP VIDEO SWITCH	PI5V330	
L1	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L10	HLC100K02A	L CHIP COIL	10UH MLF 2012	
L11	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L12	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L13	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L14	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L15	HLC472M01D	L CHIP COIL	4.7MH M SLF7045	
L16	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L17	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L18	HLC109M02B	L CHIP COIL	1UH M NLCV25T	
L19	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L2	HLC101K01C	L CHIP COIL	100UH K NLC5650T	
L22	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L23	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L24	HLC100K02A	L CHIP COIL	10UH MLF 2012	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
loc	parts code	parts name	parts descr	
L25	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L26	HLC479J00A	L CHIP COIL	4.7UH MLF2012	
L27	HLC151K01E	L CHIP COIL	150UH K 120120	
L28	HLC100K02A	L CHIP COIL	10UH MLF 2012	
L3	HLC100K03B	L CHIP COIL	10UH K NLCV25T-PF	
L30	HLC100K03B	L CHIP COIL	10UH K NLCV25T-PF	
L31	HLC479J00A	L CHIP COIL	4.7UH MLF2012	
L32	HLC189K00A	L CHIP COIL	1.8UH K MLF 2012	
L33	HLC100K03B	L CHIP COIL	10UH K NLCV25T-PF	
L36	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L37	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L38	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L39	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L4	HLC109M02B	L CHIP COIL	1UH M NLCV25T	
L40	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L41	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L42	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L43	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L44	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L45	HLC569K00A	L CHIP COIL	5.6UH MLF2012E	
L49	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L50	FFMMZ301A	F CHIP FERRITE BEAD	300 OHM MMZ 2012Y	
L51	FFMMZ301A	F CHIP FERRITE BEAD	300 OHM MMZ 2012Y	
L52	FFMMZ301A	F CHIP FERRITE BEAD	300 OHM MMZ 2012Y	
L53	FFMMZ301A	F CHIP FERRITE BEAD	300 OHM MMZ 2012Y	
L54	HLC151K01E	L CHIP COIL	150UH K 120120	
L55	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L56	HFEACF470B	F CHIP EMI	ACF321825 47P	
L57	HFEACF470B	F CHIP EMI	ACF321825 47P	
L58	HFEACF470B	F CHIP EMI	ACF321825 47P	
L6	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L61	HFEACF470B	F CHIP EMI	ACF321825 47P	
L62	HFEACF470B	F CHIP EMI	ACF321825 47P	
L63	HFEACF470B	F CHIP EMI	ACF321825 47P	
L64	HFEACF470B	F CHIP EMI	ACF321825 47P	
L65	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L66	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L67	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L68	HFEACF470B	F CHIP EMI	ACF321825 47P	
L69	HFEACF470B	F CHIP EMI	ACF321825 47P	
L7	HFEACF470B	F CHIP EMI	ACF321825 47P	
L71	HLC479K03C	L CHIP COIL	4.7UH K NLC5650T	
L72	HLC189K00A	L CHIP COIL	1.8UH K MLF 2012	
L73	HLC100K03B	L CHIP COIL	10UH K NLCV25T-PF	
L74	HLC479K03C	L CHIP COIL	4.7UH K NLC5650T	
L75	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L76	FFMMZ400A	F CHIP FERRITE BEAD	40 OHM MMZ 2012S	
L77	HLC479K03C	L CHIP COIL	4.7UH K NLC5650T	
L82	HLB300M04A	L CHIP BEAD	30 OHM MPZ 2012	
L83	HLB300M04A	L CHIP BEAD	30 OHM MPZ 2012	
loc	parts code	parts name	parts descr	
L84	HLC479J00A	L CHIP COIL	4.7UH MLF2012	
L85	HLC479J00A	L CHIP COIL	4.7UH MLF2012	
L9	FFMMZ202A	F CHIP FERRITE BEAD	2000 OHM MMZ 2012Y	
LP1	HFRMZA600A	F CHIP BEAD ARRAY	60 OHM MZA 3216Y	
LP2	HFRMZA600A	F CHIP BEAD ARRAY	60 OHM MZA 3216Y	
LP3	HFRMZA600A	F CHIP BEAD ARRAY	60 OHM MZA 3216Y	
LP4	HFRMZA600A	F CHIP BEAD ARRAY	60 OHM MZA 3216Y	
LP5	HFRMZA600A	F CHIP BEAD ARRAY	60 OHM MZA 3216Y	
LP6	HFRMZA600A	F CHIP BEAD ARRAY	60 OHM MZA 3216Y	
P10	49590001S0	CONN WAFER	12505WR-06A00	
P10A	49590001S0	CONN WAFER	12505WR-06A00	
P11	4859294220	CONN WAFER	12507WR-20(SMD)	
P3	49590004S0	CONN WAFER	12505WR-12(SMD)	
P6	4859294420	CONN WAFER	12505WR-14(SMD)	
P6A	4859294420	CONN WAFER	12505WR-14(SMD)	
P9	49590009S0	CONN WAFER	12505WR-05A00	

Service part list

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
P9A	49590009S0	CONN WAFER	12505WR-05A00	
Q1	T2N7002M-B	FET CHIP	2N7002MTF SOT-23 60V 0.2A	
Q10	T2SA1037KB	TR CHIP	2SA1037AKT146-R	
Q11	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q13	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q14	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q15	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q16	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q17	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q18	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q19	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q2	T2N7002M-B	FET CHIP	2N7002MTF SOT-23 60V 0.2A	
Q20	T2SA1037KB	TR CHIP	2SA1037AKT146-R	
Q21	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q22	T2SA1037KB	TR CHIP	2SA1037AKT146-R	
Q23	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q24	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q25	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q26	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q27	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q3	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q31	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q32	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q33	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q34	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q35	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q36	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q37	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q38	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q39	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q4	T2SA1037KB	TR CHIP	2SA1037AKT146-R	
Q40	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q41	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q5	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
loc	parts code	parts name	parts descr	
Q6	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q7	T2SC2412KB	TR CHIP	2SC2412K-T146-BR	
Q8	T2SA1037KB	TR CHIP	2SA1037AKT146-R	
Q9	T2SA1037KB	TR CHIP	2SA1037AKT146-R	
R103	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R104	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R106	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R11	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R111	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R114	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R115	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R116	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R117	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R118	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R119	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R12	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R124	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R125	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R126	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R127	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R129	HRFT303JBA	R CHIP	1/10 30K OHM J 1608	
R133	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R134	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R135	HRFT562JBA	R CHIP	1/10 5.6K OHM J 1608	
R136	HRFT512JBA	R CHIP	1/10 5.1K OHM J 1608	
R137	HRFT512JBA	R CHIP	1/10 5.1K OHM J 1608	
R138	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R139	HRFT272JBA	R CHIP	1/10 2.7K OHM J 1608	
R143	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R144	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R145	HRFT331JBA	R CHIP	1/10 330 OHM J 1608	
R147	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R149	HRFT331JBA	R CHIP	1/10 330 OHM J 1608	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R15	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
R150	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R155	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R16	HRFT151JBA	R CHIP	1/10 150 OHM J 1608	
R160	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R163	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R165	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R168	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R169	HRFT751JBA	R CHIP	1/10 750 OHM J 1608	
R17	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R170	HRFT511JBA	R CHIP	1/10 510 OHM J 1608	
R171	HRFT752JBA	R CHIP	1/10 7.5K OHM J 1608	
R172	HRFT431JBA	R CHIP	1/10 430 OHM J 1608	
R173	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R174	HRFT752JBA	R CHIP	1/10 7.5K OHM J 1608	
R175	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R176	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
loc	parts code	parts name	parts descr	
R177	HRFT512JBA	R CHIP	1/10 5.1K OHM J 1608	
R178	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R179	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R180	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R181	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R182	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R183	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R184	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R187	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R188	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R19	HRFT272JBA	R CHIP	1/10 2.7K OHM J 1608	
R190	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R192	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R193	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R194	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R195	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R197	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R2	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R20	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R207	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R208	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R209	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R213	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R214	HRFT220JBA	R CHIP	1/10 22 OHM J 1608	
R215	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R216	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R217	HRFT220JBA	R CHIP	1/10 22 OHM J 1608	
R219	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R22	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R220	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R224	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R225	HRFT473JBA	R CHIP	1/10 47K OHM J 1608	
R227	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R23	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R231	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R232	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R233	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R240	HRFT222JBA	R CHIP	1/10 2.2K OHM J 1608	
R255	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R26	HRFT220JBA	R CHIP	1/10 22 OHM J 1608	
R260	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R265	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R266	HRFT220JBA	R CHIP	1/10 22 OHM J 1608	
R268	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R269	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R270	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
R271	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R275	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R276	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R278	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	

Service part list

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
loc	parts code	parts name	parts descr	
R279	HRFT303JBA	R CHIP	1/10 30K OHM J 1608	
R280	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R281	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R282	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R29	HRFT202JBA	R CHIP	1/10 2K OHM J 1608	
R290	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
R294	HRFT123JBA	R CHIP	1/10 12K OHM J 1608	
R295	HRFT272JBA	R CHIP	1/10 2.7K OHM J 1608	
R296	HRFT682JBA	R CHIP	1/10 6.8K OHM J 1608	
R297	HRFT472JBA	R CHIP	1/10 4.7K OHM J 1608	
R299	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R3	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R30	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R300	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R302	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
R303	HRFT224JBA	R CHIP	1/10 220K OHM J 1608	
R313	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R319	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R32	HRFT202JBA	R CHIP	1/10 2K OHM J 1608	
R320	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R321	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R322	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R323	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R324	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R325	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R326	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R327	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R328	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R329	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R43	HRFT151JBA	R CHIP	1/10 150 OHM J 1608	
R44	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
R45	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R46	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R47	HRFT752JBA	R CHIP	1/10 7.5K OHM J 1608	
R48	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R50	HRFT151JBA	R CHIP	1/10 150 OHM J 1608	
R51	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
R52	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R6	HRFT000-BA	R CHIP	1/10 0 OHM 1608	
R62	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R64	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R66	HRFT470JBA	R CHIP	1/10 47 OHM J 1608	
R70	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R73	HRFT272JBA	R CHIP	1/10 2.7K OHM J 1608	
R74	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R8	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R81	HRFT562JBA	R CHIP	1/10 5.6K OHM J 1608	
R84	HRFT391JBA	R CHIP	1/10 390 OHM J 1608	
R85	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R86	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
loc	parts code	parts name	parts descr	
R87	HRFT122JBA	R CHIP	1/10 1.2K OHM J 1608	
R88	HRFT272JBA	R CHIP	1/10 2.7K OHM J 1608	
R9	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
R92	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
R93	HRFT752JBA	R CHIP	1/10 7.5K OHM J 1608	
R97	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
R98	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
R99	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
RP1	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP17	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP18	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP19	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP2	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP20	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP21	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP22	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RP23	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP24	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP25	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP26	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP27	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP28	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP29	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP3	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP30	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP31	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP32	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP33	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP34	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP35	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP36	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP37	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP38	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
RP4	HRTS8E470J	R CHIP ARRAY	1/16 8P 47 OHM J 3216	
A001	4859815324	PCB IF	246X246 C1B	
P701	4859297520	CONN WAFER(PIN HEADER)	4603-11MH1-1	
TU1	4859724930	TUNER VARACTOR	UV1316/A1-4	

9-2. Difference List of SL-110P

		DLP-15D3SHS		DLP-17D3SHS		DLP-20D3AHS		
loc	parts_name	parts_desc	parts_code	Parts_desc	parts_code	parts_desc	Parts_code	
V901	LCD PANEL	LTM150XH-L06	485LD01156	LTM170W1-L01	485LD05171	A201SN02-V0	485LD08200	
V902	MODULE	DS-1015WDS	4850M001NV	DS-1017WDS	4850M008NV	DS-1020WDA	4850M004NV	
	INVERTER							
ADT1	ADAPTER	AP06312	4859000840	AP06312	4859000840	AP06315-UV	4859000740	
A001	PCB MAIN	260 × 234 G4V	4859804996	260 × 234 G4V	4859804996	260 × 234 G4V	4859816892	
SP01	SPEAKER	SP-4872N03	4858316610	SP-4872N03	4858316610	SP-5090N04	4858317110	
SP02	SPEAKER	SP-4872N03	4858316610	SP*4872N03	4858316610	SP-5090N04	4858317110	
PA11	CABLE LVDS AS	12507HS-20+ 1712LHS=140	4859003060	12507HS-20+ 1712LHS=140	4859003060			
PA8	CABLE FFC					R-50 × 122-0.5- 0.05 × 0.3-4/4-6/6	4859002460	
M150	CORE FERRITE	ZCAT1325-0530A	4850K02200	ZCAT1730-0730A	4850K02300			EMI
M170	SHEET TAPE AL	TO.06 AL-35 70 × 40	21500901SV					EMI
P11	CONN WAFER	12507WR-20(SMD)	4859294220	12507WR-20(SMD)				
P8	CONN WAFER					05002HR-50A01	4859297320	
P601A	CONNECTOR	YH025-04+YRT205+ YRT110+ULW= 800+200	4850704S49	YH025-04+YRT205+ YRT110+ULW= 800+200	4850704S49	YH025-04+YRT205+ YRT110+ULW= 900+200	4850704S50	
IC17	IC CHIP	EL-LV835	1ELLV385-E	EL-LV385	1ELLV385-E			
IC27	IC CHIP REGULATOR					PF317CM	1PJ317CM-E	
IC28	IC CHIP REGULATOR					PJ317CM	1PJ317VM-E	
R203	R CHIP	1/10 0 OHM 1608	HRFT000-BA			1/10 0 OHM 1608	HRFT000-BA	GAMMA
R54	R CHIP	1/10 56 OHM J 1608	HRFT560JBA	1/10 56 OHM J 1608	HRFT560JBA			
R57	R CHIP					1/10 240 OHM J 1608	HRFT241JBA	
R58	R CHIP					1/10 56 OHM J 1608		
R78	R CHIP					1/10 2K OHM J 168	HRFT202JBA	
R94	R CHIP					1/10 2K OHM J 1608	HRFT202JBA	
R95	R CHIP					1/10 240 OHM J 1608	HRFT241JBA	
L85	L CHIP COIL	4.7UH MLF2012	HLC479J00A	4.7UH MLF2012	HLC479J00A			
C109	C CHIP CERA	50V X7R 0.1MF K 1608	HCBK104KBA	50V X7R 0.1MF K 1608	HCBK104KBA			
C111	C CHIP CERA	50V X7R 0.1MF K 1608	HCBK104KBA	50V X7R 0.1MF K 1608	HCBK104KBA			
C112	C CHIP CERA	50V X7R 0.1MF K 1608	HCBK104KBA	50V X7R 0.1MF K 1608	HCBK104KBA			
C118	C CHIP CERA	50V Z7R 0.1MF K 1608	HCBK104KBA	50V Z7R 0.1MF K 1608	HCBK104KBA			
C383	C CHIP CERA	50V X7R 0.1MF K 1608	HCBK104KBA	50V X7R 0.1MF K 1608	HCBK104KBA			
C97	C CHIP CERA	50V X7R 0.1MF K 1608	HCBK104KBA	50V X7R 0.1MF K 1608	HCBK104KBA			
C384	C CHIP ELECTRO	25V 10MF CM 4052	HCELH100MC	25V 10MF CM 4052	HCELH100MC			
J7	WIRE COPPER	AWG22 1/0.65 TIN COATING	85801065GY	AWG22 1/0.65 TIN COATING	85801065GY			
J8	WIRE COPPER	AWG22 1/0.65 TIN COATING	85801065GY	AWG22 1/0.65 TIN COATING	85801065GY			
M123	SHIELDRON	12 × 18 × 8T	485a101170	18 × 18 × 20T	485a101270			
M124	SHIELDRON	30 × 140 × 7.5T	485A101470	12 × 12 × 8T	485A101370	18 × 300 × 18T	485A101770	EMI
M125	SHIELDRON	30 × 140 × 7.5T	485A101470	40 × 240 × 14.5T	485A101570	40 × 190 × 24T	485A101870	EMI
M126	SHIELDRON	8 × 170 × 22T	485A101970			27 × 140 × 27T	485A102170	EMI
M127	SHIELDRON	54 × 90 × 30T	485A102070			54 × 140 × 27T	485A102270	EMI
M128	SHIELDRON	30 × 70 × 7.5T	485A102370					EMI
M100A	SHIELDRON	40 × 60 × 16T	485A100870	40 × 60 × 10T	485A100770	40 × 60 × 10T	485A100770	EMI
M110A	SHIELDRON	40 × 60 × 4T	485A100670	40 × 60 × 16T	485A100870	40 × 60 × 4T	485A100670	EMI
TU1A	SHIELDRON			40 × 30 × 6T	485A100970	40 × 30 × 6T	485A100970	EMI
TU21A	SHIELDRON	40 × 30 × 10T	485A101070					EMI

10. Adapter

10-1. DLP-15D3SHS / DLP-17D3SHS

* Specification

Model	AP06312	SAD6012SE
Manufacturing	ANAM Instrument	H&E
Input Voltage	AC100~240V 50/60Hz	AC100~240V 50/60Hz
Output Voltage	12Vdc (11.4~12.6Vdc)	12Vdc (11.4~12.6Vdc)
Output Current	0~5.25A	0~5.0A
STAND BY Power	3W under	3W under
Power Consumption	DLP-15D3SHS : 34W DLP-17D3SHS : 40W	DLP-15D3SHS : 34W DLP-17D3SHS : 40W
Over current Protection	6.0~11A	5.8~9.5A
Over voltage Protection	Over 13.2 Vdc	Over 13.2 Vdc

10-2. DLP-20D3AHS

* Specification

Model	AP06315-UV	SAD7015SE
Manufacturing	ANAM Instrument	H&E
Input Voltage	AC100~240V 50/60Hz	AC100~240V 50/60Hz
Output Voltage	15Vdc (14.25~15.75Vdc)	15Vdc (14.5~15.5Vdc)
Output Current	0~4.2A	0~4.5A
STAND BY Power	3W under	3W under
Power Consumption	DLP-20D3AHS : 50W	DLP-20D3AHS : 50W
Over current Protection	5.5~13A	5.0~9.5A
Over voltage Protection	MAX 20 Vdc	Over 16.5 Vdc

11. Inverter

11-1. Specificatin

	DLP-15D3SHS	DLP-17D3SHS	DLP-20D3AHS
Model	DS-1015WDS	DS-1017WDS	DS-1020WDA
Input Voltage(VIN_PWR)	10.8~13.2V	10.8~13.2V	14.5~16.5V
Dimming Voltage(VBRT)	0~5.0V	0~5.0V	0~5.0V
Lamp ON/PFF Voltage (BLKON)	3.0~7.0V	3.0~7.0V	3.0~7.0V
Lamp Active Voltage (Vo)	665 Vrms	710 Vrms	800 Vrms
Lamp number	4 Lamp	4 Lamp	6 Lamp

(1) Typical Input Voltage : 12V(DLP-15/17D3SHS), 15V(DLP-20D3AHS).

(2) Dimming voltage : 0V : MAX BRIGHTNESS 5.0V : Min brightness
Fix : 0V

(3) Lamp ON/OFF Voltage : HIGH : Inverter ON / Low : Inverter OFF
~ HIGH : BLKON $\geq$ 3.0V / ~ LOW : BLKON $\leq$ 3.0V

(4) Lamp Active Voltage : Normal : 600 ~ 800 Vrms
Initial condition : Over 1000 Vrms

11-2. Connection

* Pin Array

Connection

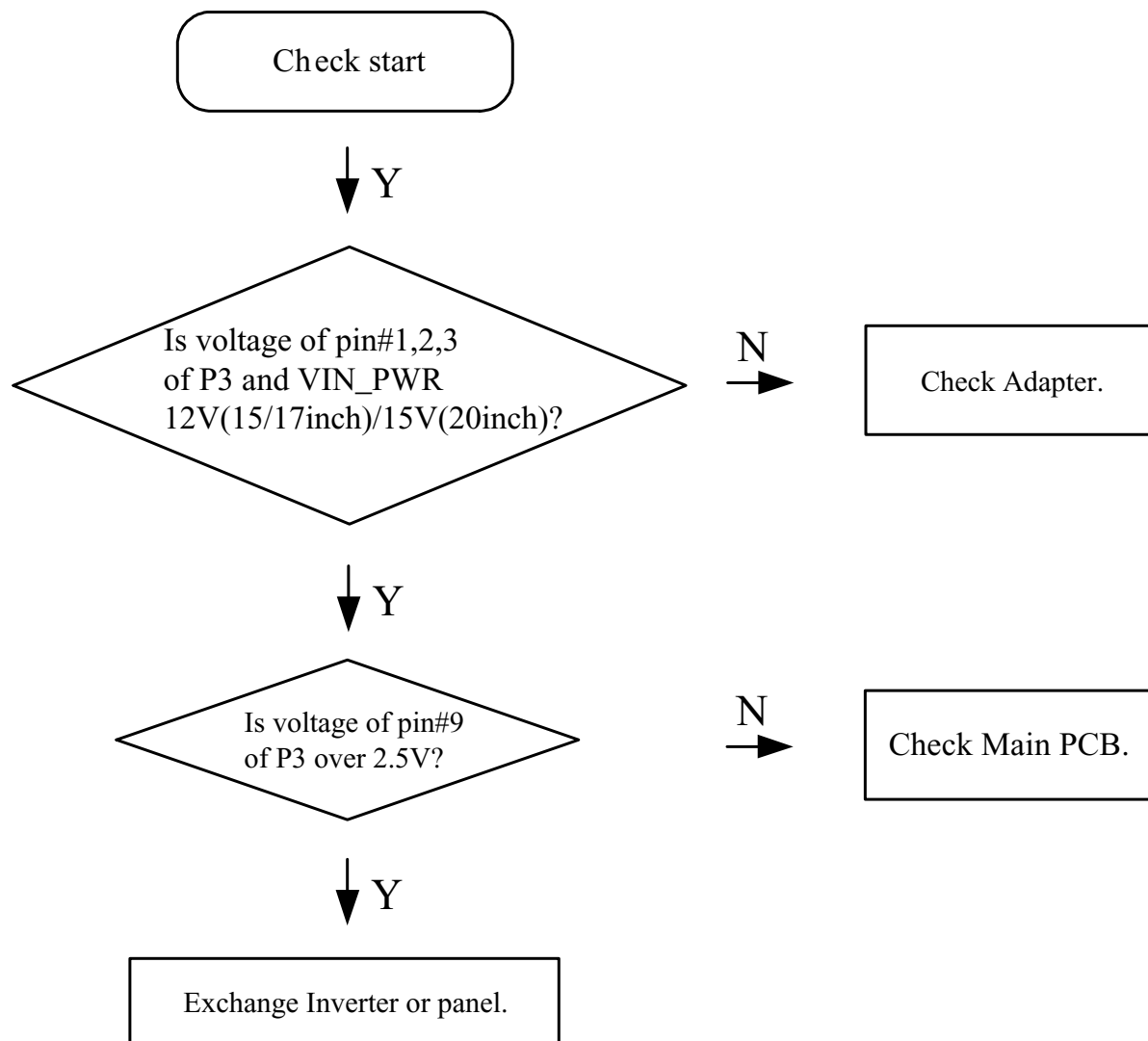
Name	CONN WAFER	CONNECTOR
LOCATION	P3	PA3
SPECIFICATION	12505WR-12	12505HS-12+12505HS-12+ULW=100
Manufacturing	YeonHo	Chunwoo
Pin	12 Pin	12 Pin

Pin Array

Pin	
1, 2, 3	VIN_PWR
4, 5, 7, 8, 10, 12	GND
6	NC
9	BLKON
11	VBRT

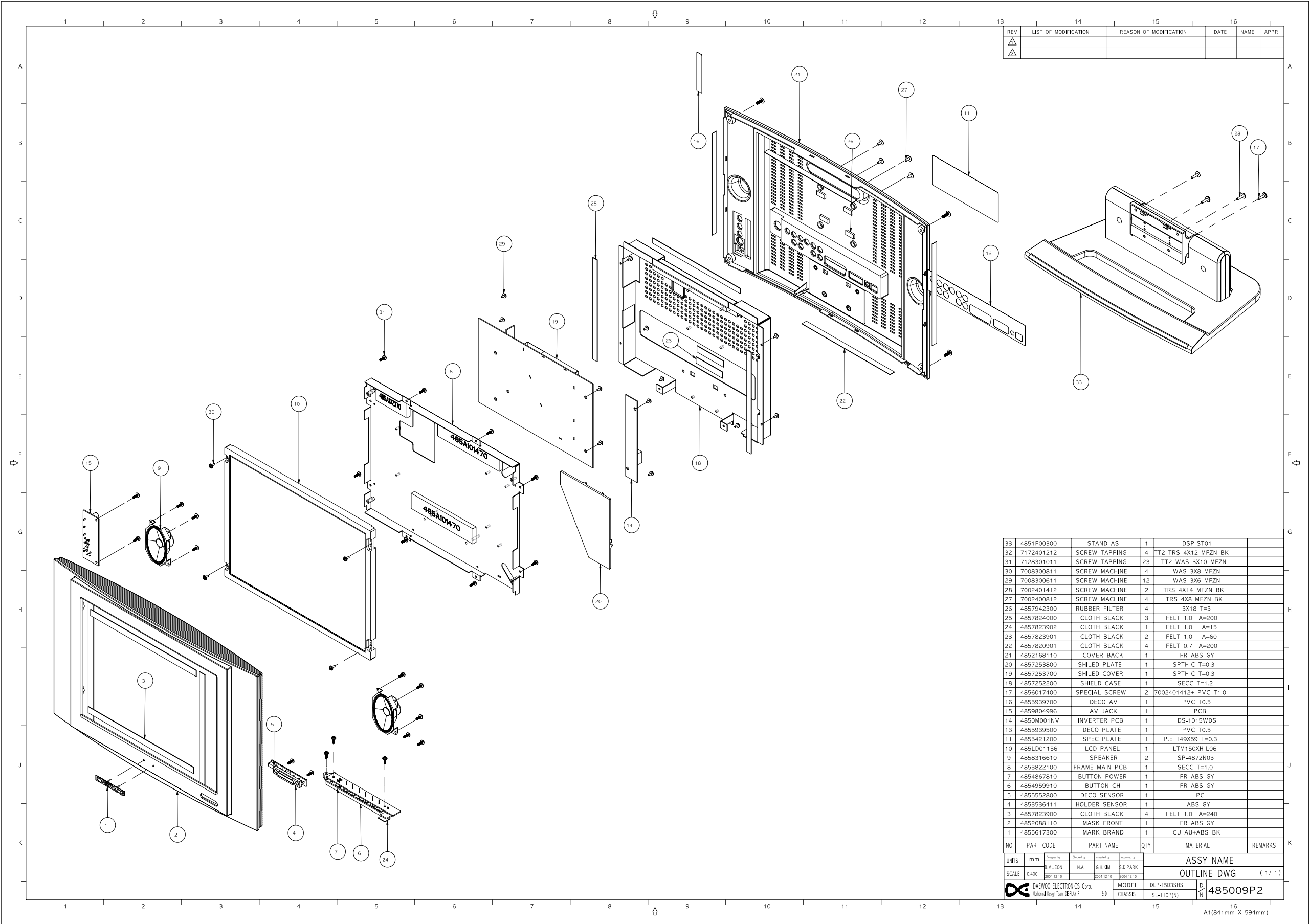
11-3. Troubleshooting

*Backlight doesn't turn on



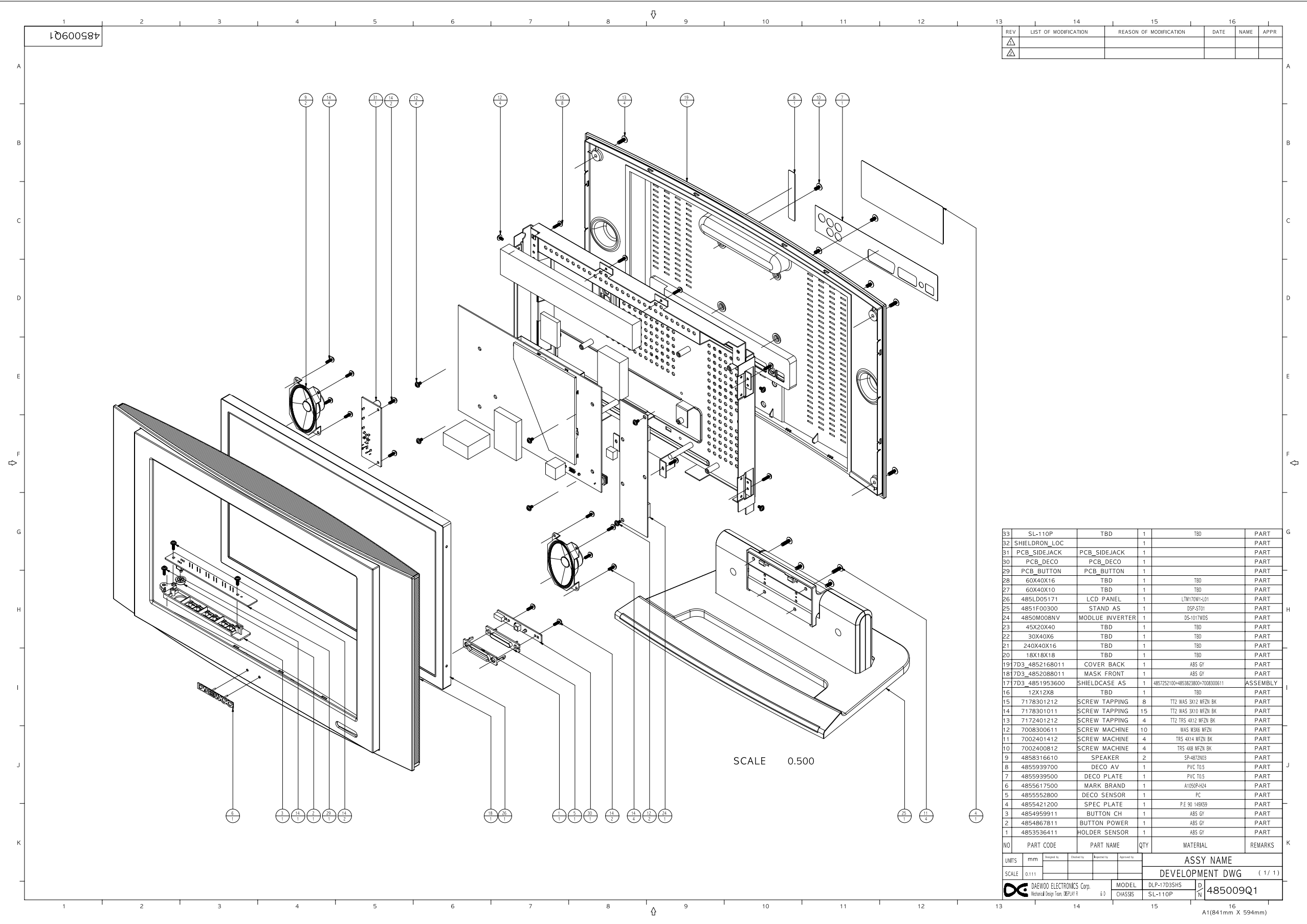
12. Exploded View

DLP-15D3SHS



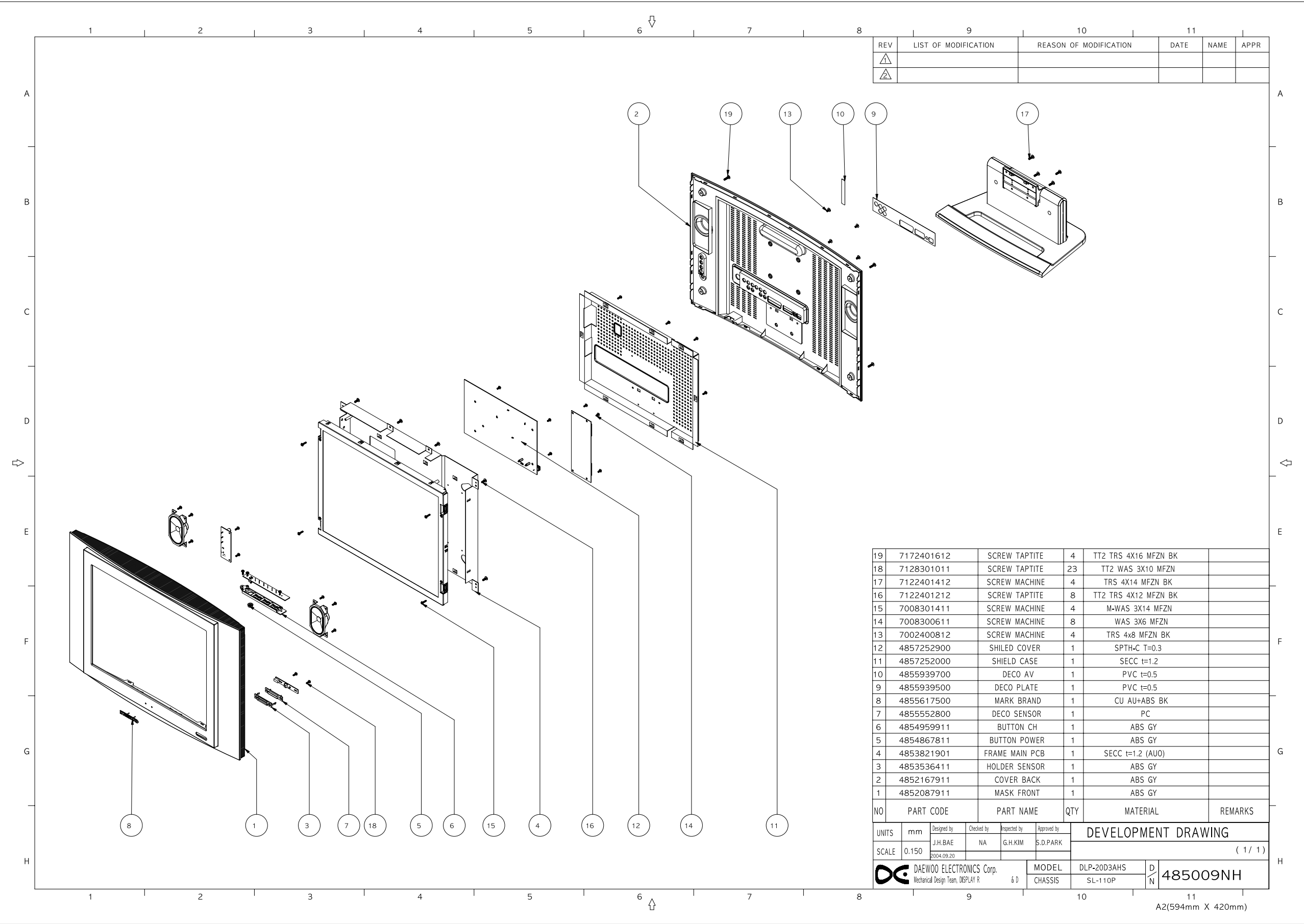
Exploded View

DLP-17D3SHS



Exploded View

DLP-20D3SHS

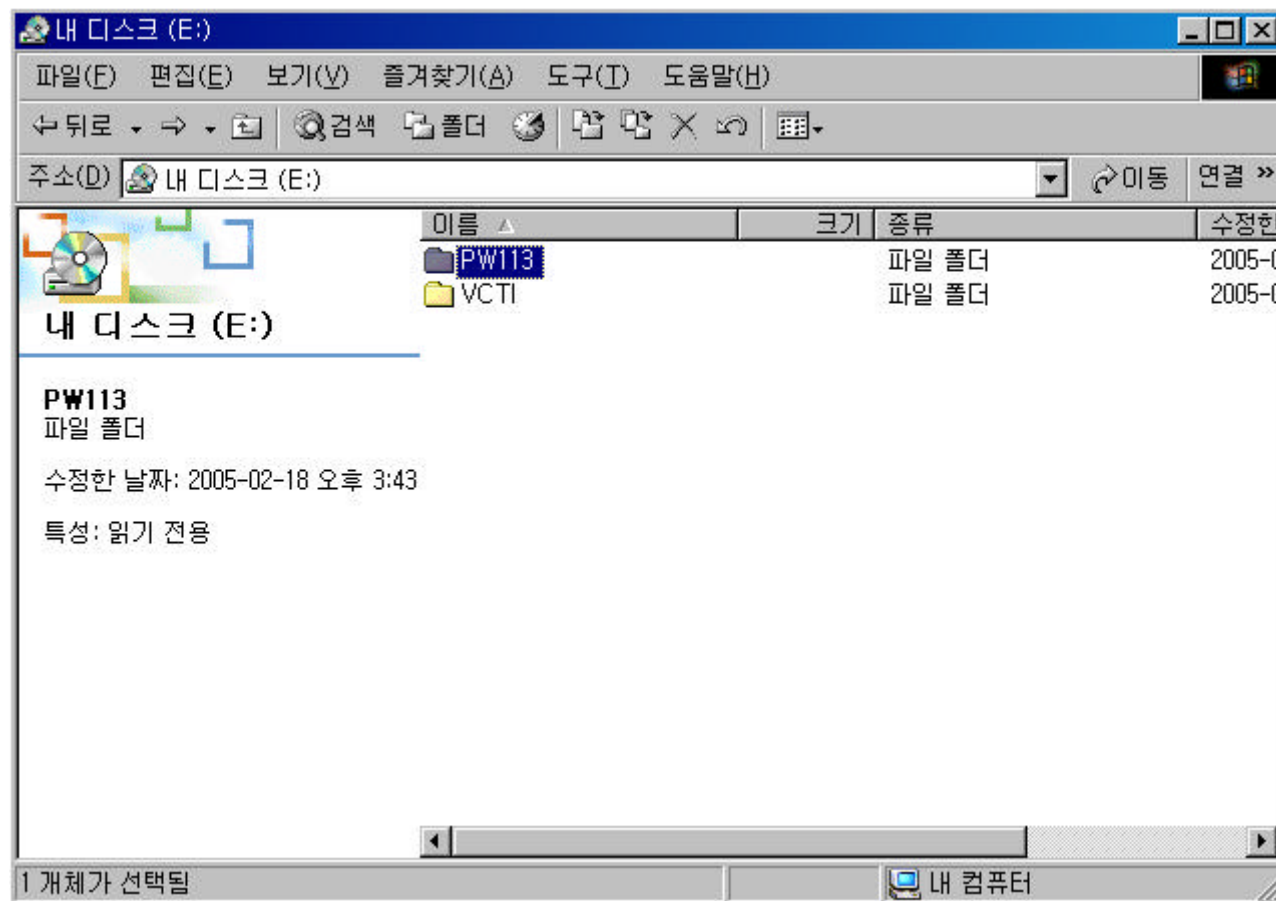




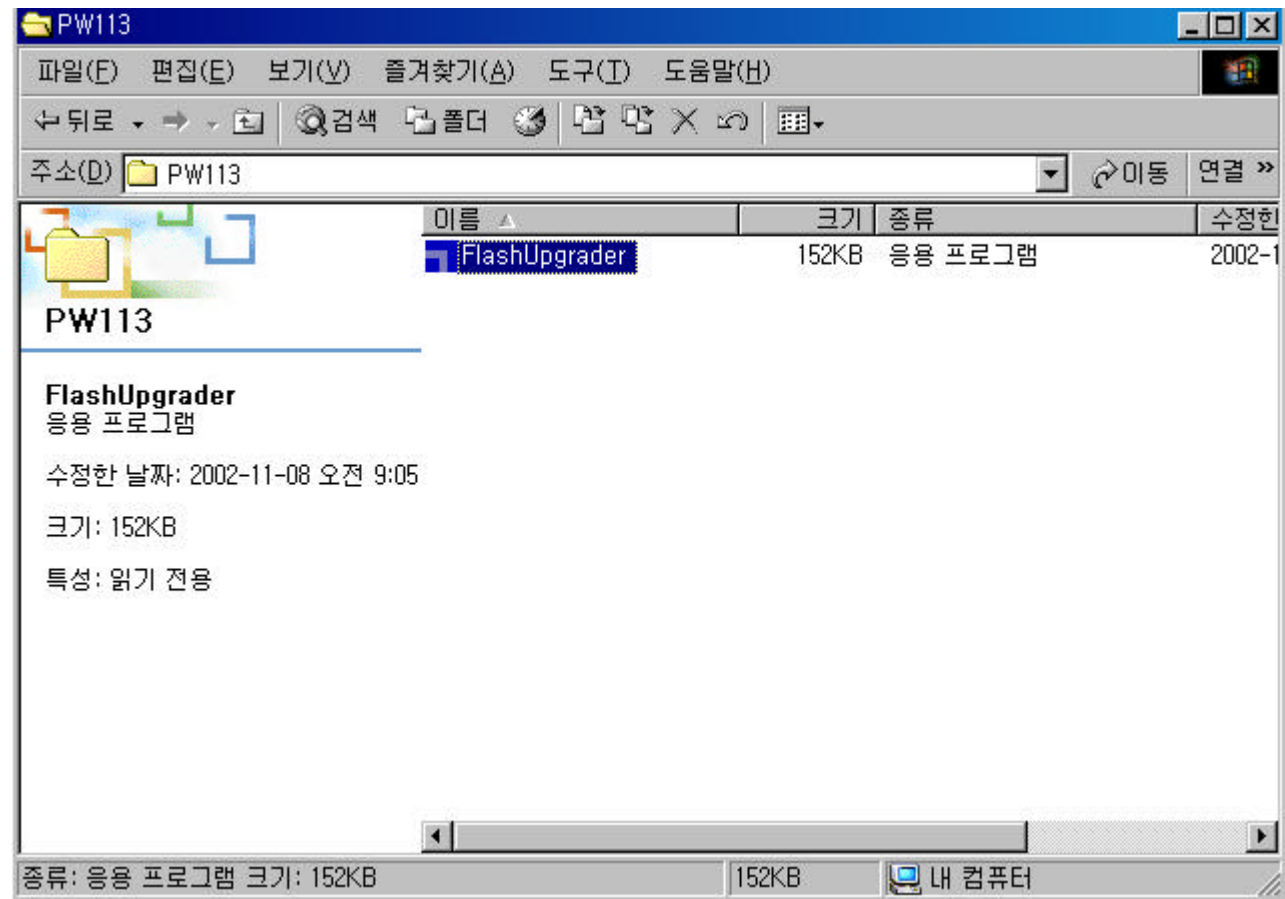
13. SOFTWARE INSTALL

9-1. Flash Rom upgrading Software install-method

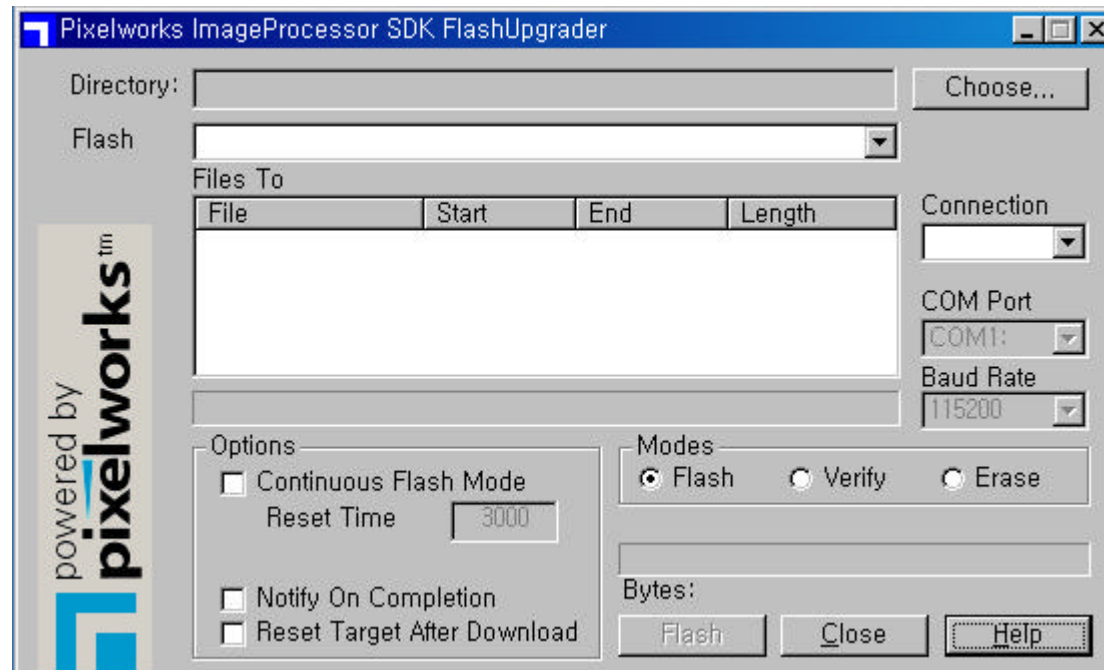
- 1) After insert the CD to CDROM , choose the “PW113” folder.



2) Copy FlashUpgrader.exe in the “PW113” folder to PC.



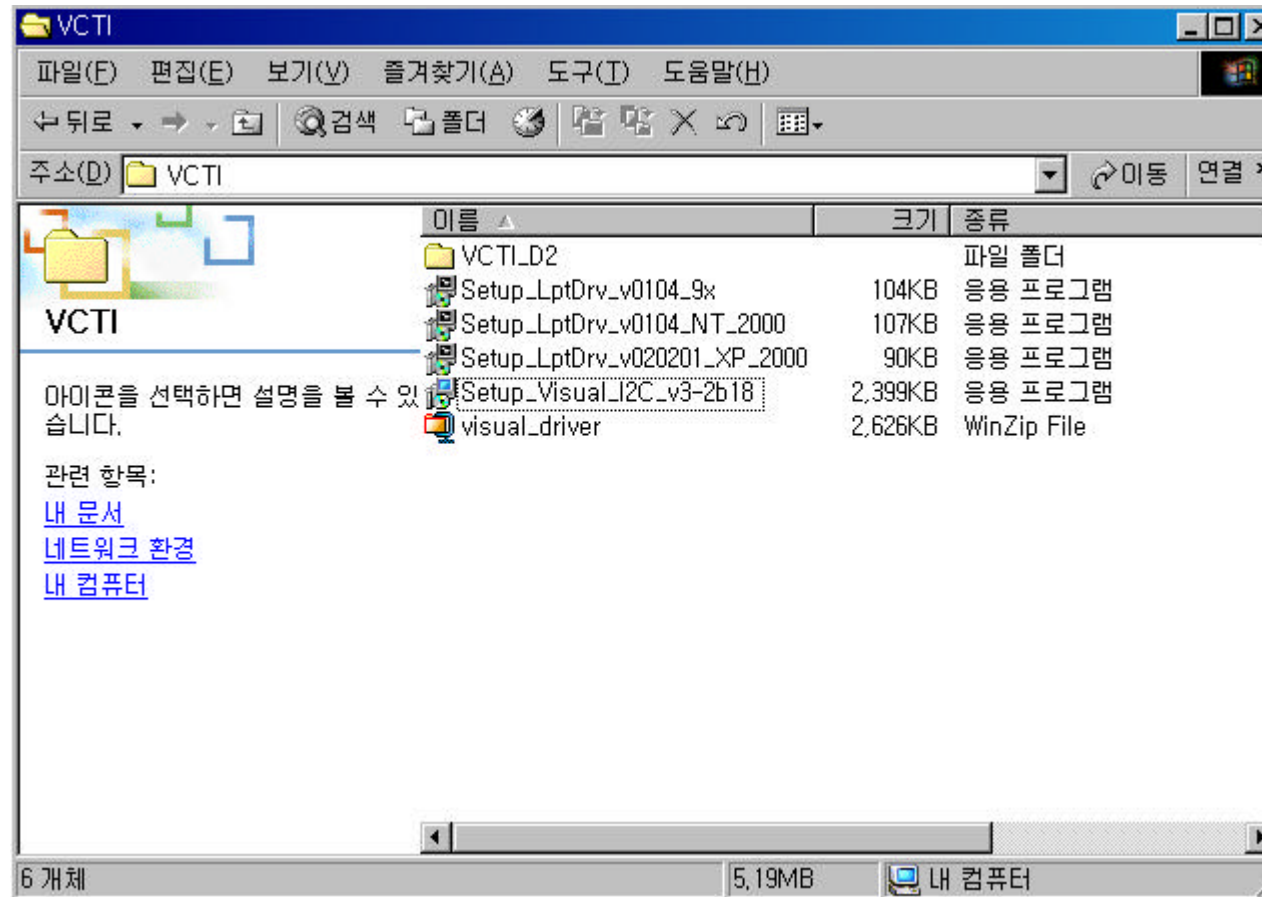
3) Run “FlashUpgrader.exe” to execute Flash Rom upgrading program without install.



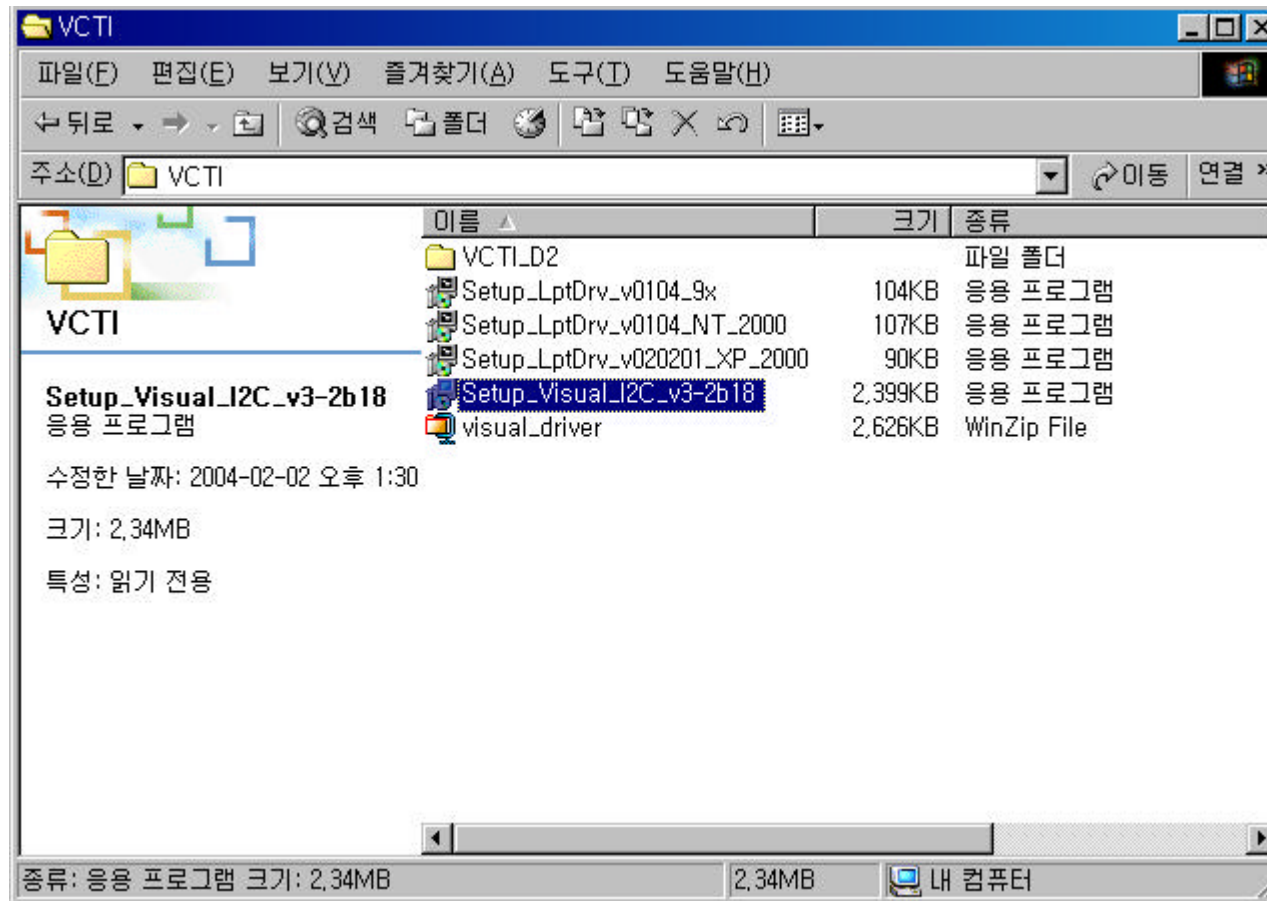
Flash Rom upgrade program

9-2. VCTI upgrading software install-method

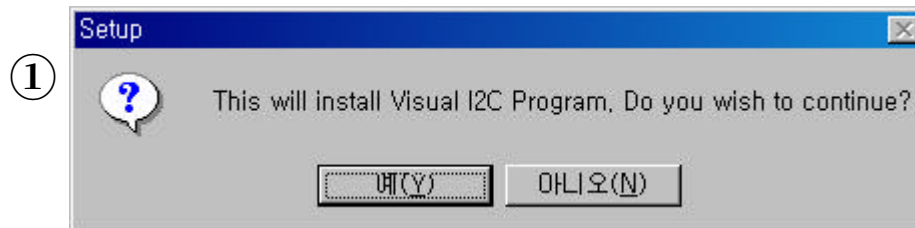
1) After insert the CD to CDROM , choose the “VCTI” folder.



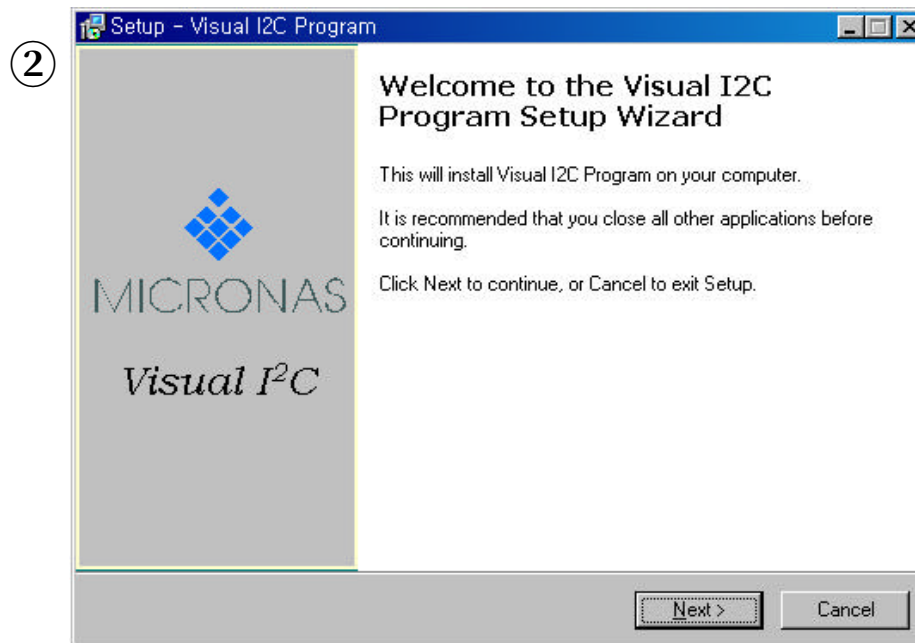
2) Click the “Setup_Visual_I2C_v3-2b18” file twice to execute.



3) Progress the Install as shown below.

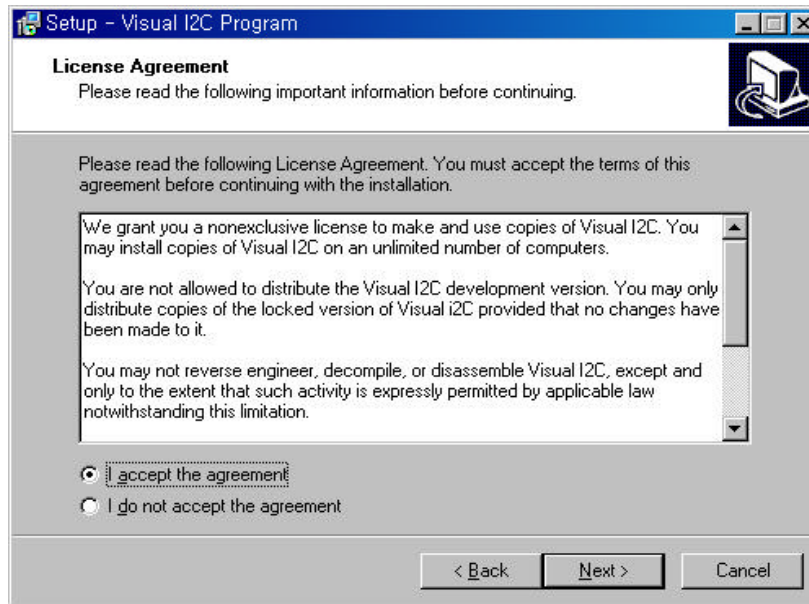


Select the “YES(Y)” button.



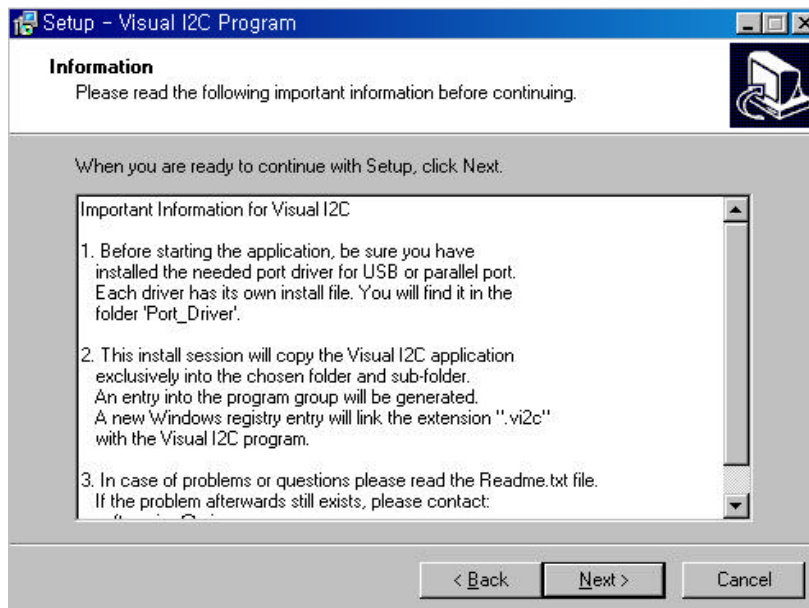
Select the “Next>” button.

3



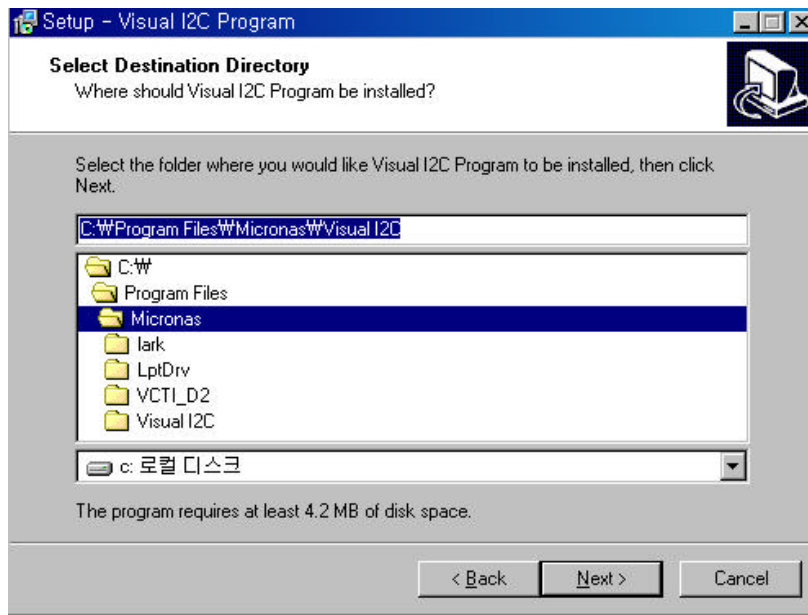
After check “I accept the agreement”
, Choose the “Next>” button.

4



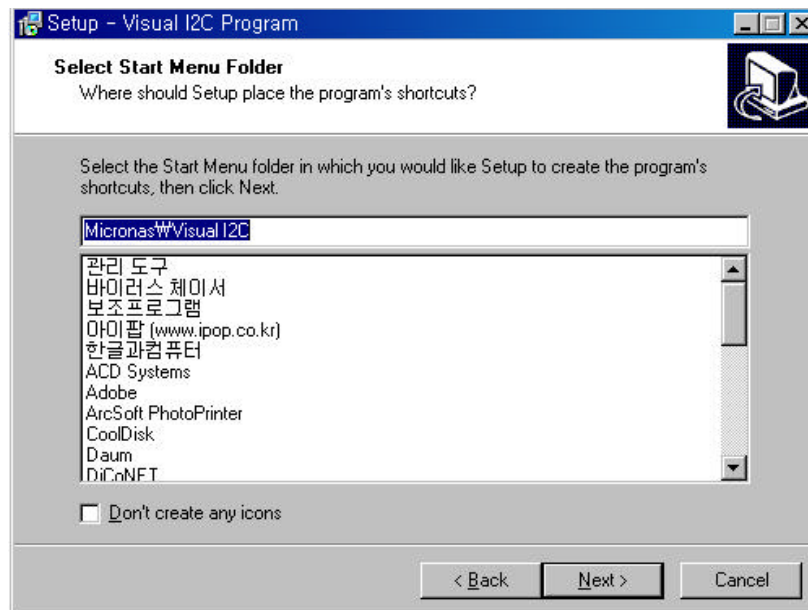
Select the “Next>” button.

5



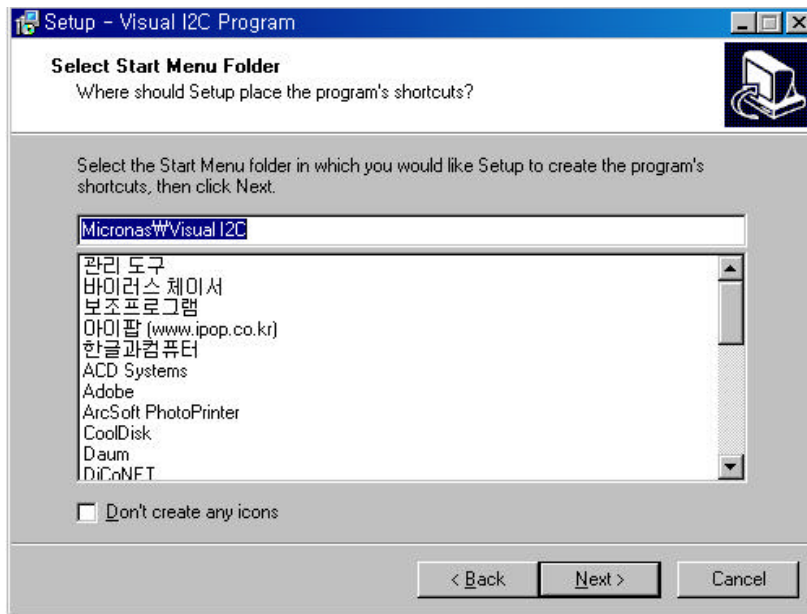
Select the “Next>” button.

6



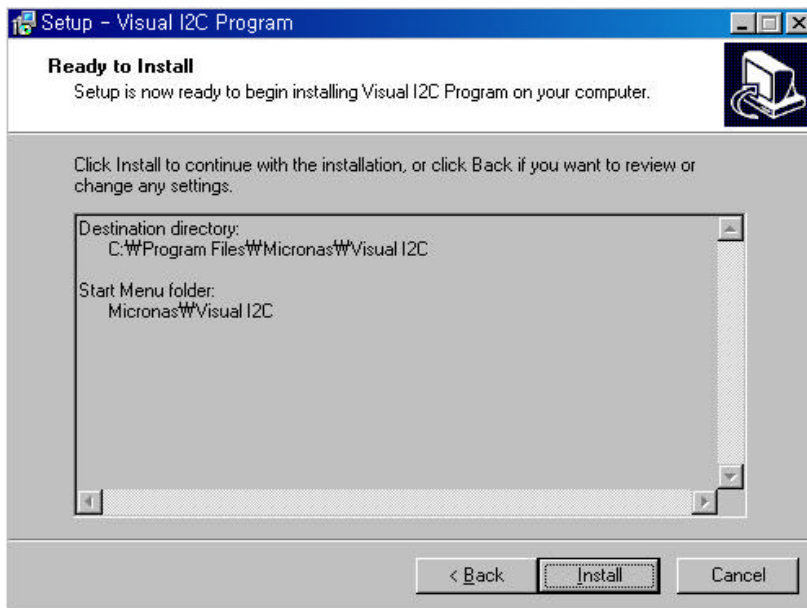
Select the “Next>” button.

7



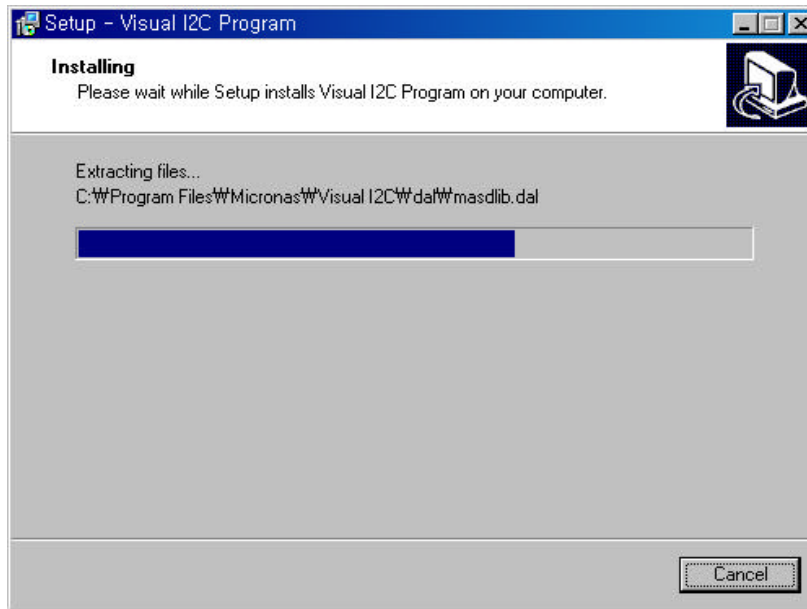
Select the “Next>” button.

8



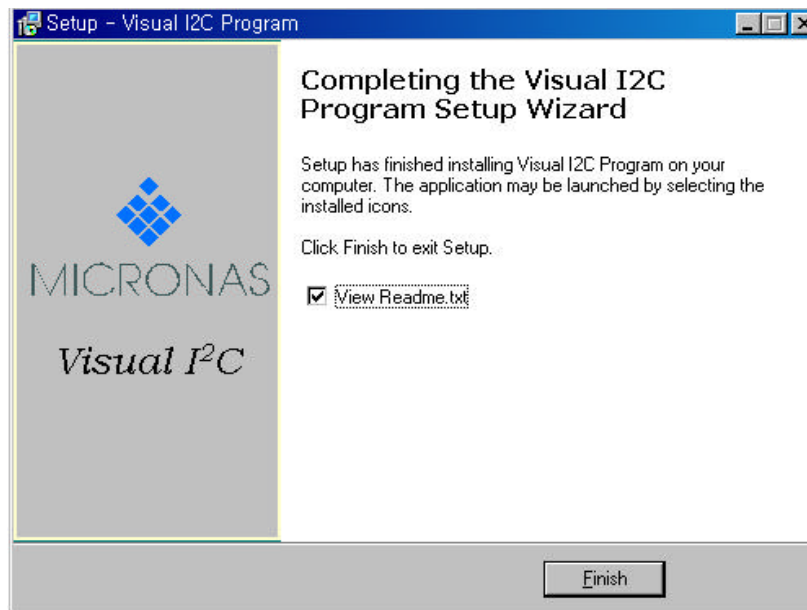
Select the “Install” button.

9



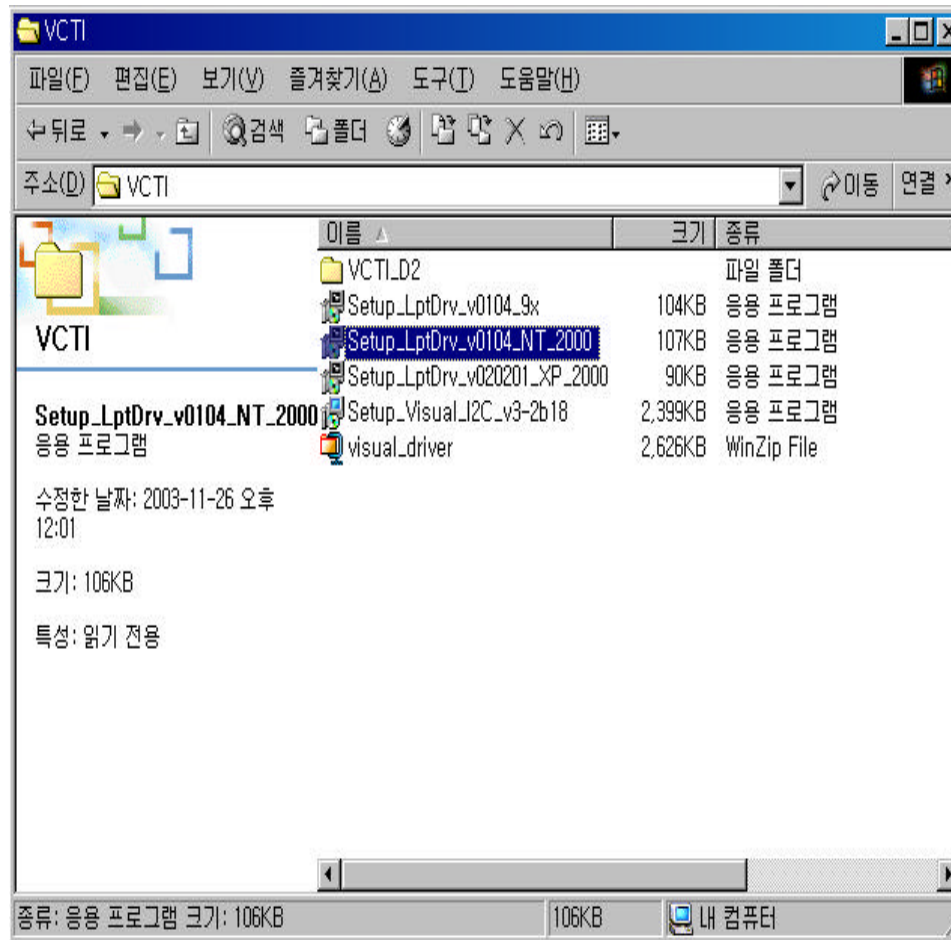
Installing.

10



Select the “Finish” button.

- 4) <Setup_LptDrv_v0104_9x, Setup_LptDrv_v0104_NT_2000, Setup_LptDrv_v0104_XP_2000.>
Choose proper one among above three for your PC operating system.



*** Caution ***

1) WINDOWS 95, 98 :

Run “ Setup_LptDrv_v0104_9x ”

2) WINDOWS NT 2000 :

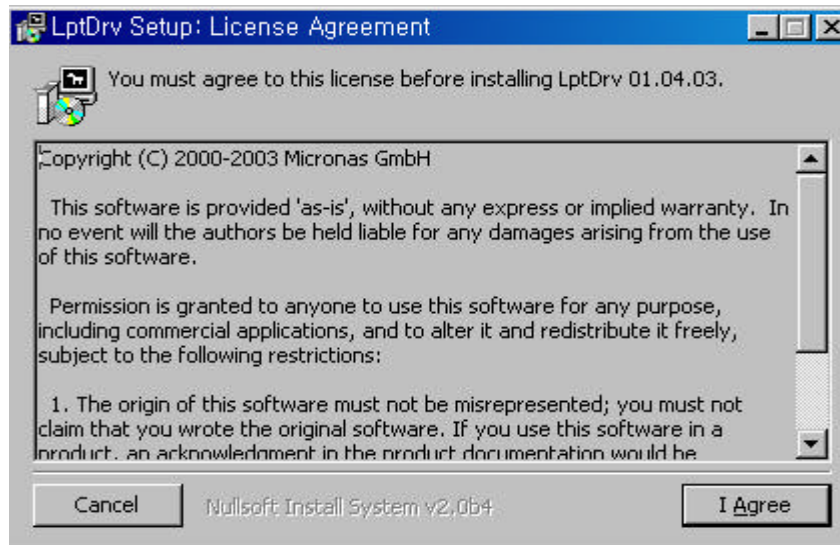
Run “Setup_LptDrv_v0104_NT_2000”

3) WINDOWS XP :

Run “Setup_LptDrv_v0104_XP_2000”

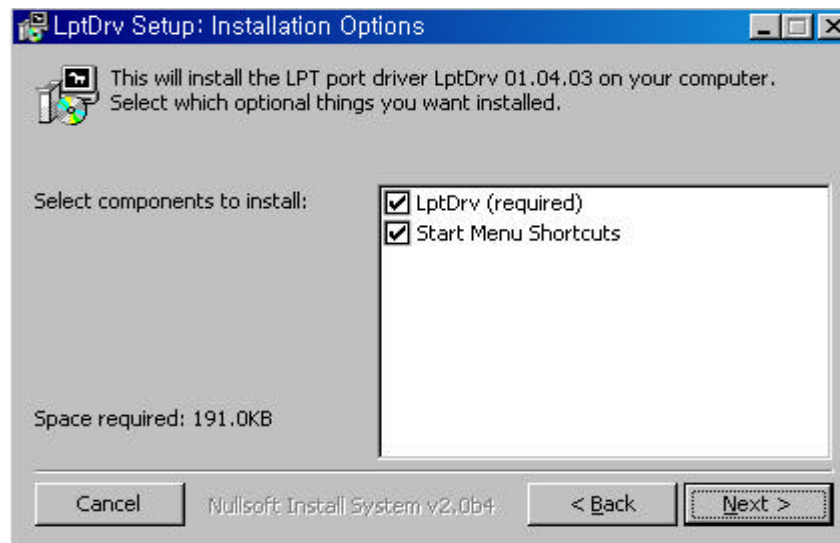
5) Progress the Install as shown below.

①



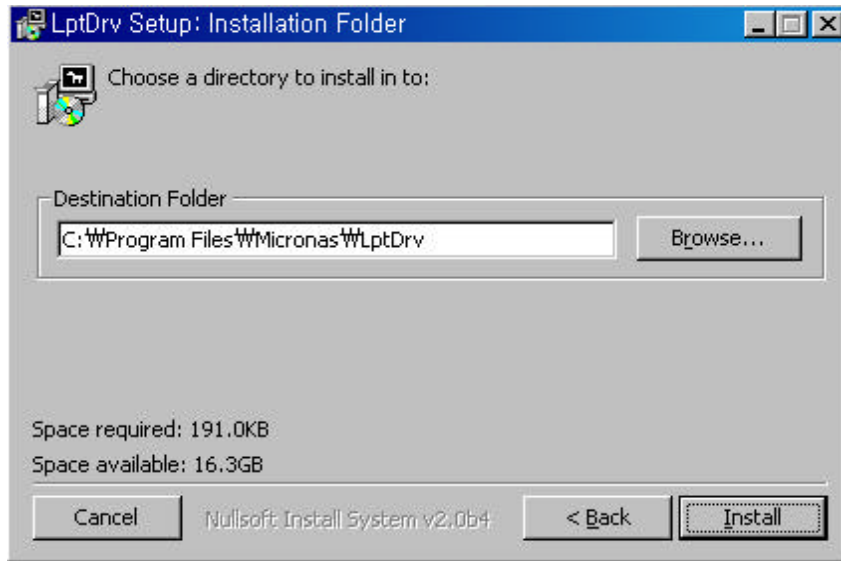
Select the “I Agree” button.

②



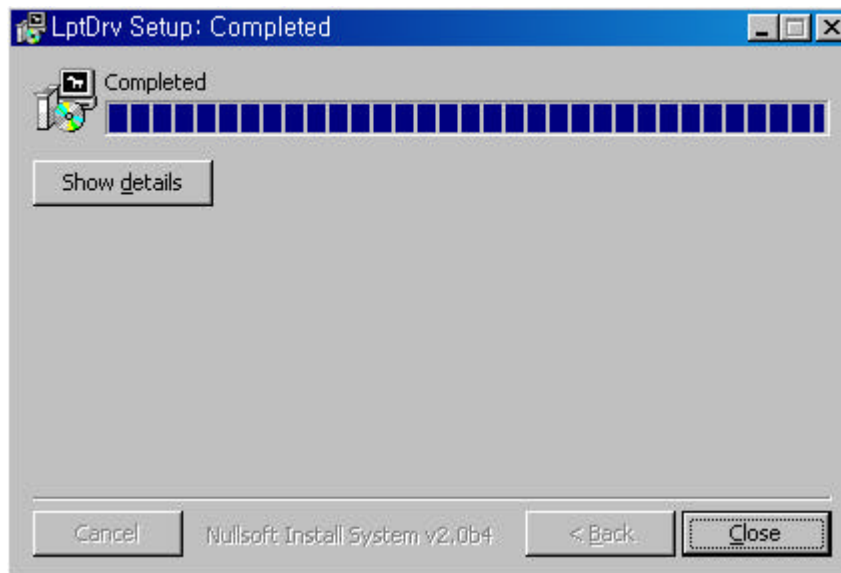
Select the “Next” button.

③



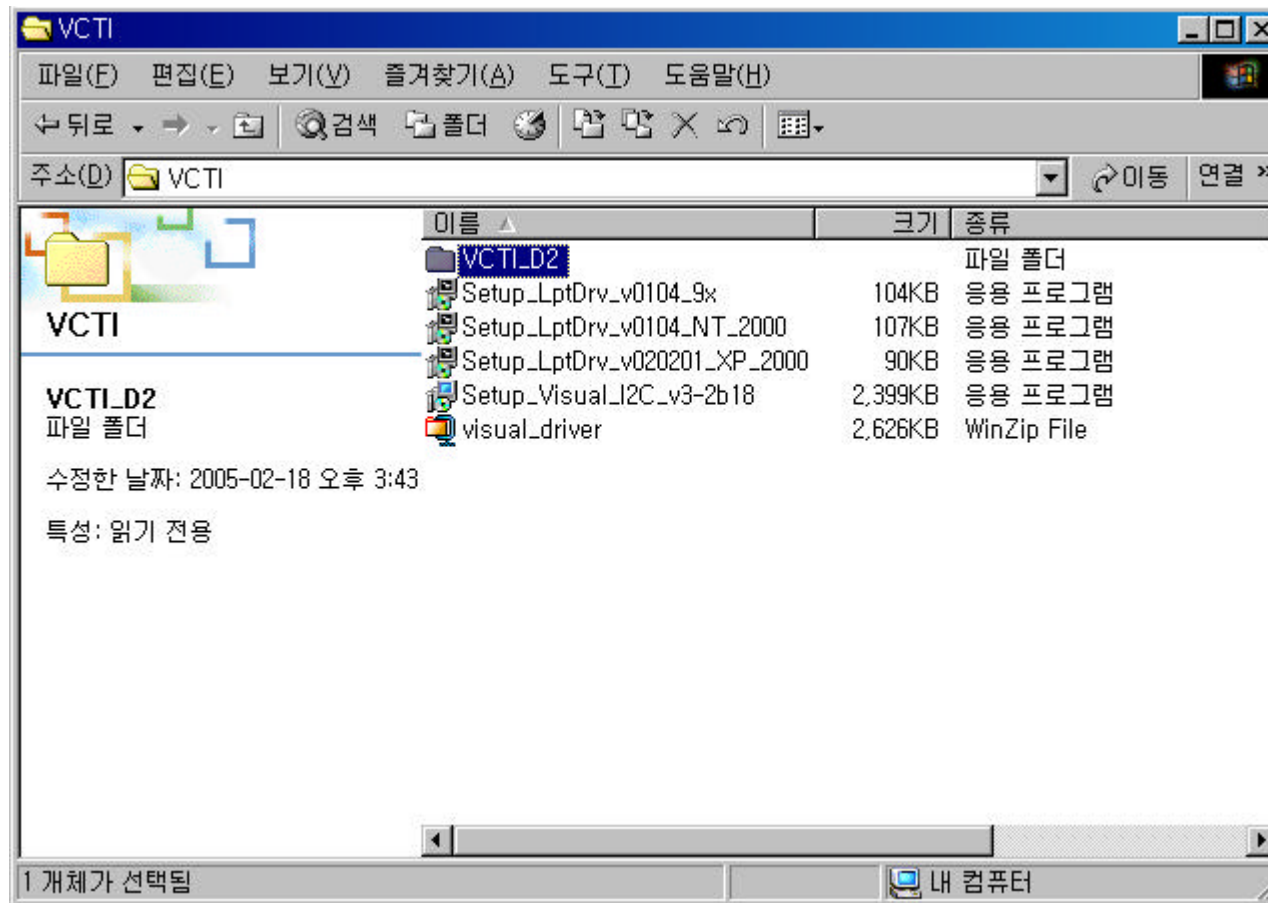
Select the “Install” button.

④



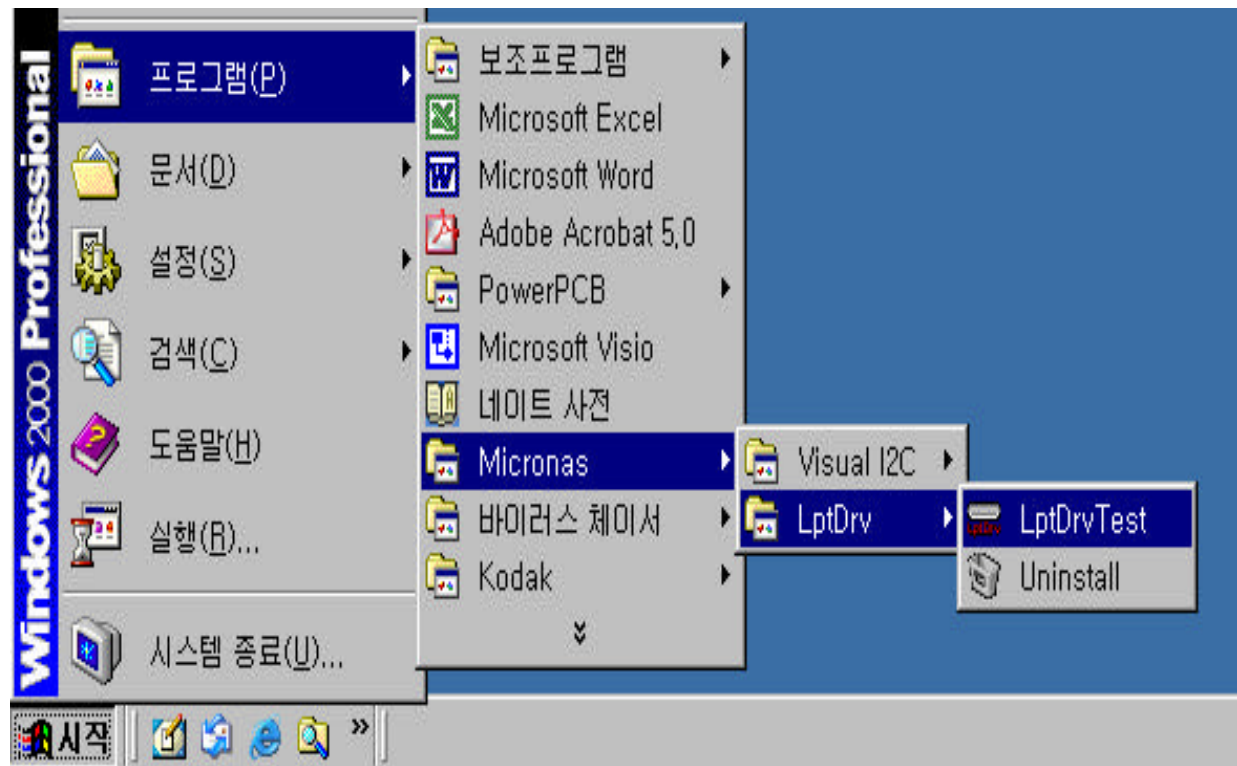
Select the “Close” button.

6) Copy “VCTI_D2” folder to PC in the CD.



7) Restart the PC.

8) Run the “LptDrvTest” in Micronas folder as shown below.



9) Run "LptDrvTest" to confirm text as below.

①

```
선택 C:\Program Files\Micronas\LptDrv\LptDrvTest.exe
MICRONAS LPTDRU Test <Syntax: LptDrvTest [-pn] <n=port num. to test>
=====
This test will check LPT number      : 1
Number of LPT Ports found           : 1

Driver ID                           : 1
LPTDRU version <LptDrvTest>          : 2.2.0
LPTDRU version running <sys/vxd>     : 1.4.0
LPTDRU version running <dll>         : 1.4.3

LptDrv checks access to Port...      : OK!
LptDrv reads status port lines...    : 0x01h

Checking I2C-Bus Adapter ...0xFEh, 0xFEh
=> LPT Driver Test OK!

Programm End
--- Wait for keystroke ---
```

"LPT Driver Test OK!"
: Install success !

②

```
선택 LptDrvTest
MICRONAS LPTDRU Test <Syntax: LptDrvTest [-pn] <n=port num. to test>
=====
This test will check LPT number      : 1
Number of LPT Ports found           : 0

Driver ID                           : 2
LPTDRU version <LptDrvTest>          : 2.2.0
LPTDRU version running <sys/vxd>     : 0.0.0
LPTDRU version running <dll>         : 2.2.1

LptDrv checks access to Port...      : Failed!

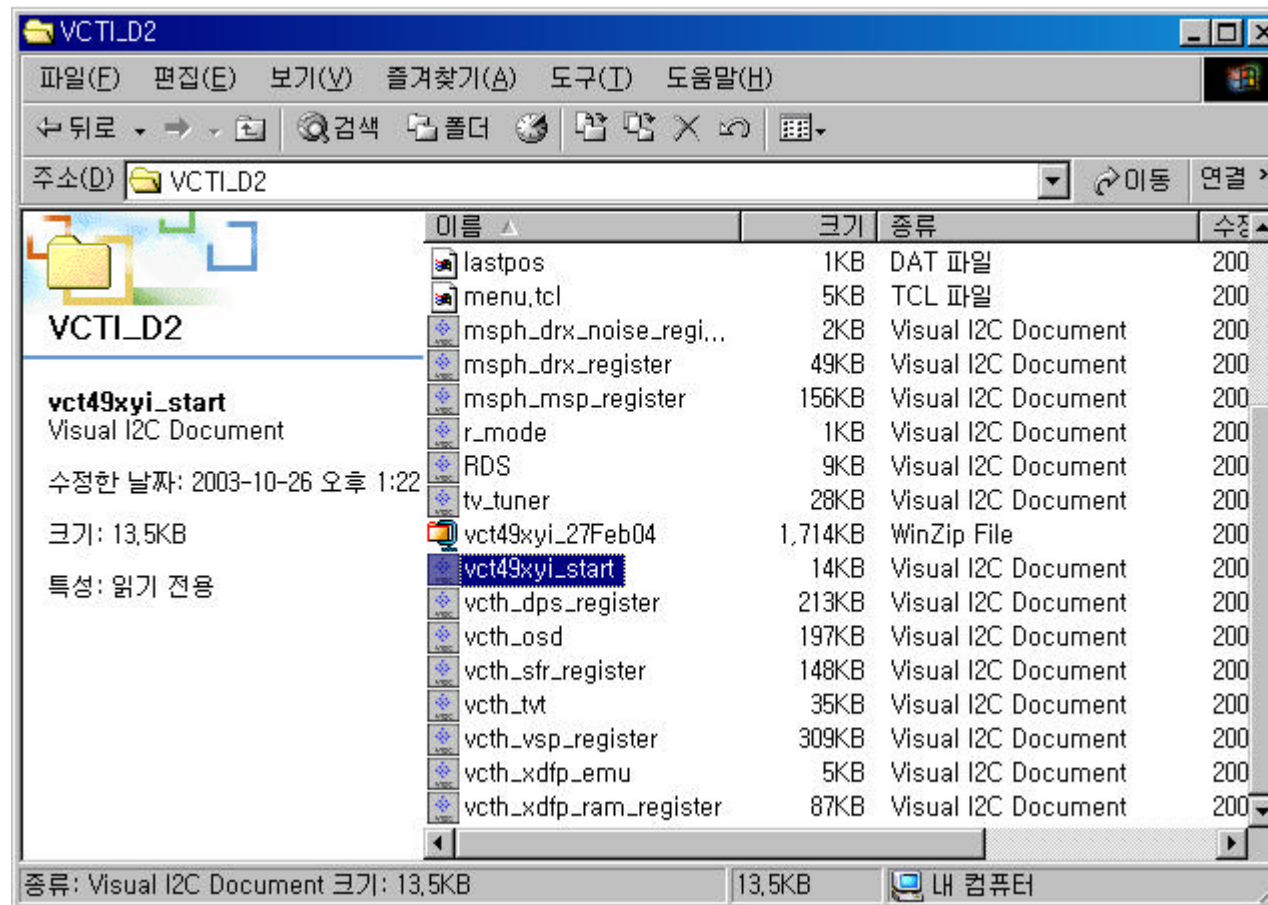
*** Error: Driver is not started by system!
*** LPT Driver Test with Error! ***

Programm End
--- Wait for keystroke ---
```

"LPT Driver Test with Error!"
: Install fail !

Repeat 4) ~ 9) process.

- 10) After install “LPT Driver Setup” successfully, Run “VCT49xyi_start” in “VCTI_D2” folder to execute VCTI software upgrade program.





14. SOFT UPGRADE





10-1. Flash ROM Upgrading method.

1) Check the files to upgrade as shown below.

- **Flashupgrader.exe**
- **PwSDK.inf**
- **Romcode.hex**
- **Gui.hex**
- **Configdata.Hex**
- **Flasher.hex**

2) Flash Rom upgrade

- ① Remove the ADAPTER JACK from the SET to power off.
 - ② Remove J2A, J2B on the J2 Wafer from the SET.
 - ③ Connect Serial cable from PC to P4 Wafer on the SET.
 - ④ Run “FlashUpgrader.exe”.
-

⑤ Figure 1. : Click the ‘Choose’ button.

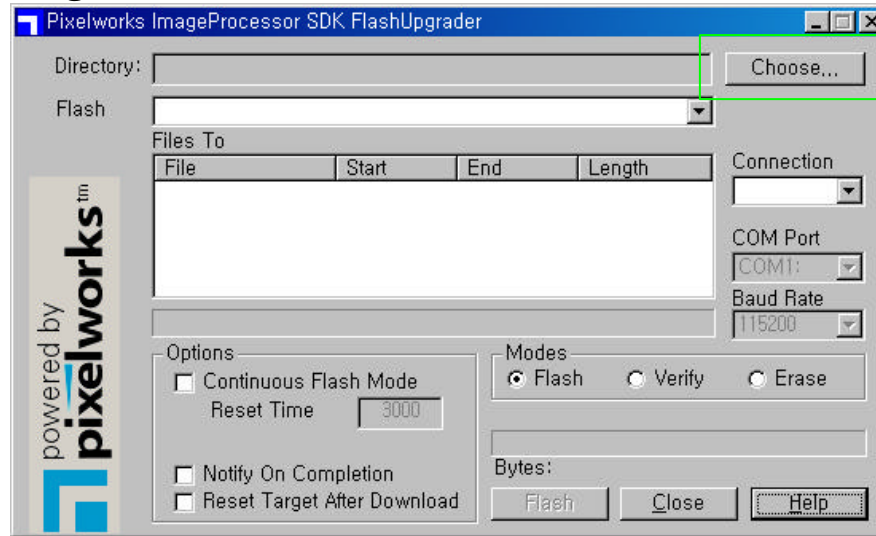


Figure1.

⑥ Figure 2 : Click twice the “PwSDK.inf”.

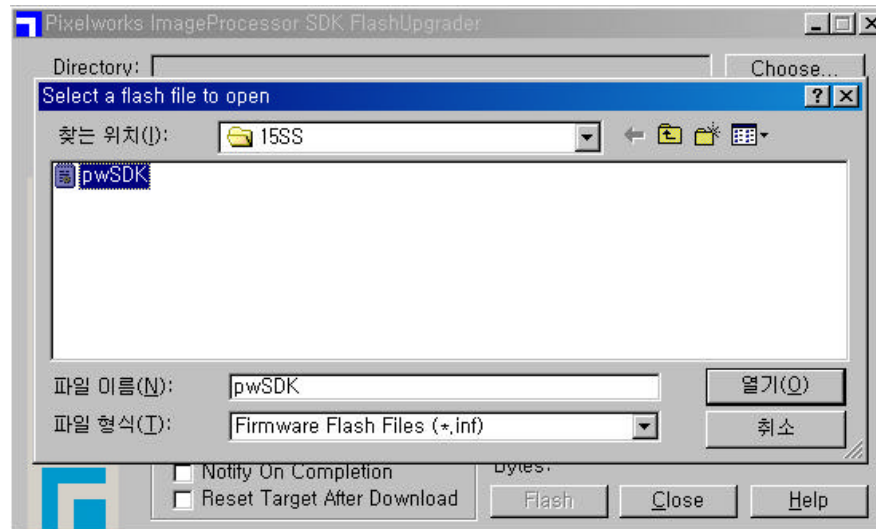


Figure2.

⑦ Figure3 : Click the “FLASH” button.

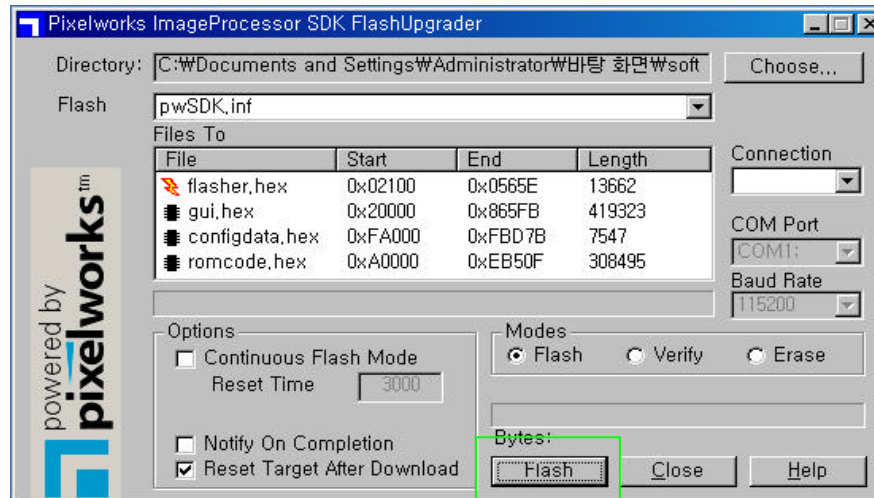
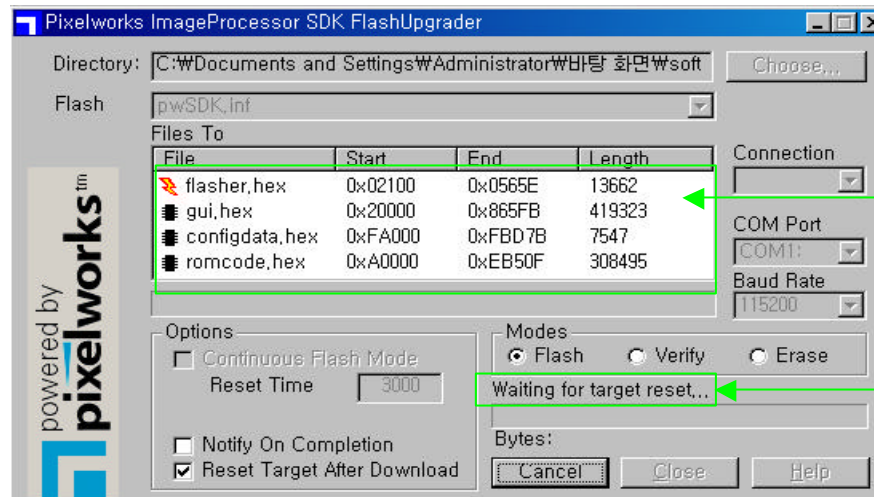


Figure3.

⑧ In Figure4 state, connect the ADAPTER Jack to the SET to power on.



Check the 4 HEX files.

- Flasher.hex
- Gui.hex
- Configdata.Hex
- Romcode.hex

“Waiting for target reset” text can be shown before connect the ADAPTER Jack to the SET to power on.

Figure4.

⑨ Figure 5 : Flash Upgrading.

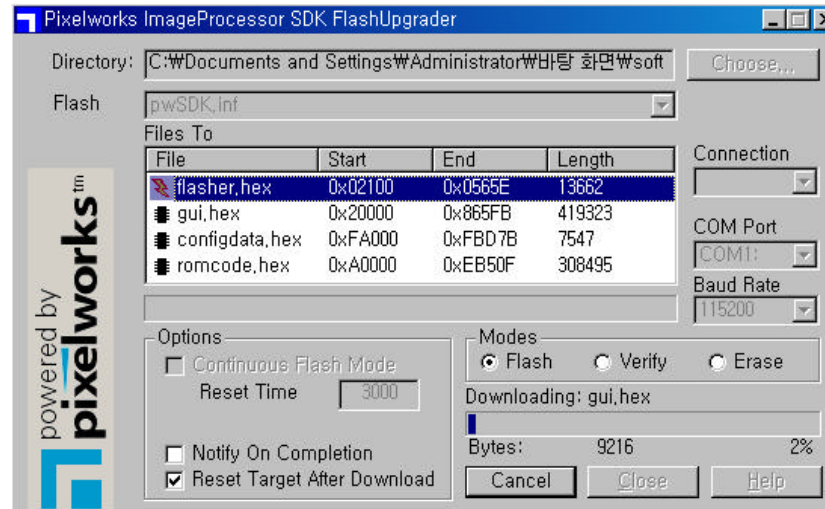


Figure5.

⑩ Figure 6 : After Flash Upgrading ends, remove the ADAPTER JACK from the SET to power off and select the “Choose” button and click twice “EraseNvRam.inf” file in the EEPROM_RESET.

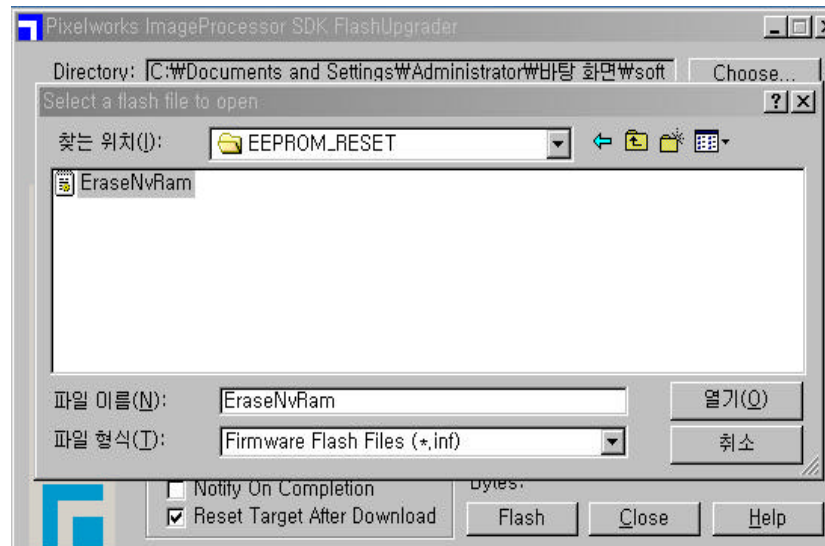
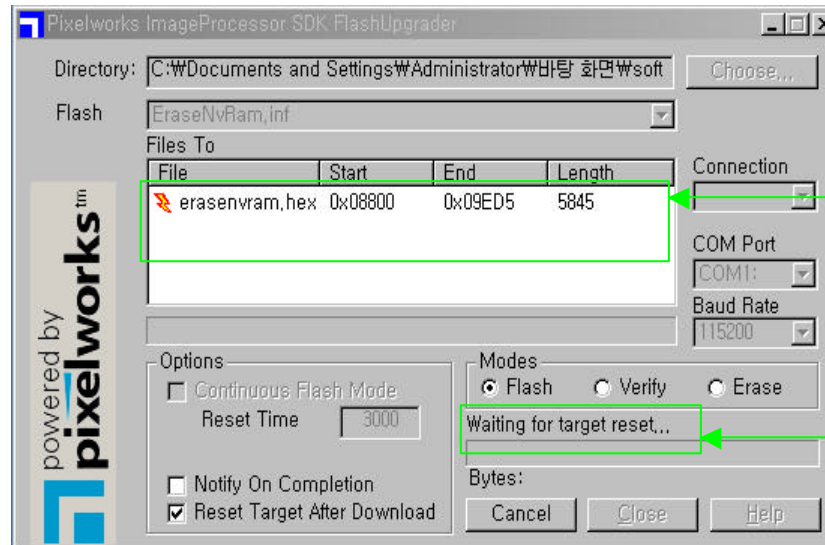


Figure6.

- ⑪ In Figure7 state, connect the ADAPTER Jack to the SET to power on and EEPROM RESET starts.



Check the “EraseNvRam.inf” file.

“Waiting for target reset” text can be shown before connect the ADAPTER Jack to the SET to power on.

Figure7.

- ⑫ After upgrading, Remove the ADAPTER JACK from the SET to power off. Disconnect Serial cable from PC to P4 Wafer on the SET. Put J2A, J2B on the J2 Wafer.



10-2. VCTI SOFT Upgrading method.

1) Check the upgrade file.

- 20050202k.bin

software version : 2005 02 02 k
year/month /date/country

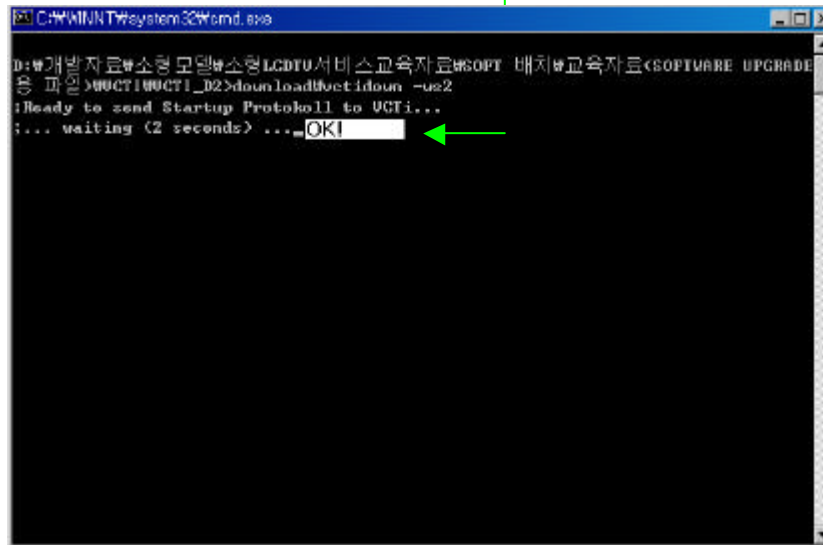
2) VCTI SOFT Upgrade

- ① Turn the SET on.
 - ② Push the “S2” key on the SVC remote controller to set “Show I2C off YES” in TV mode.
Each time you press the “S2” key, the TV will cycle through :
“ Show I2C off NO” $\longleftrightarrow$ “ Show I2C off YES”
 - ③ Connect Serial cable from PC to P13 Wafer on the SET.
 - ④ Run the “VCT49xyi_start” file in the “VCTI_D2” folder to execute VCTI soft upgrading program.
-





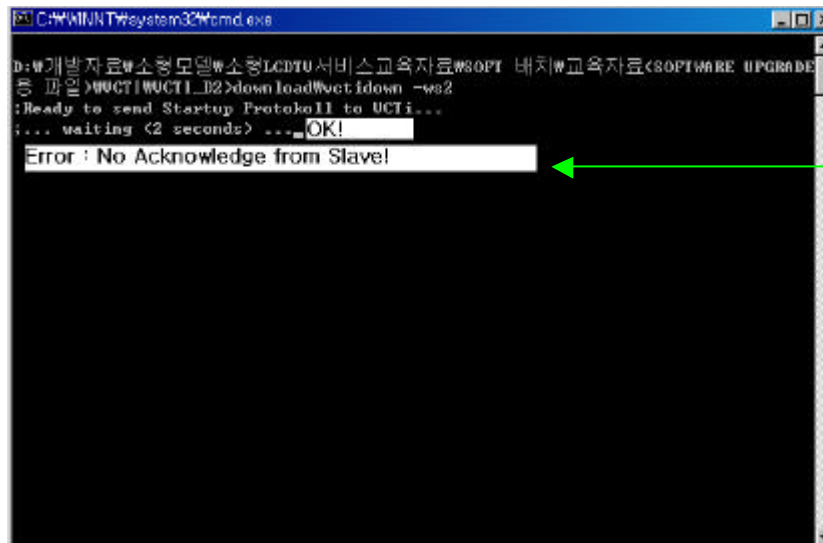
⑦ FIGURE 3 : Normal condition.



```
C:\WINNT\system32\cmd.exe
D:\개발자료\소형 모델\소형 LCD\U 서비스 교육 자료\SOFT 배치\교육 자료\SOFTWARE UPGRADE
응 프로그램>WUCT1\WUCT1_D2>download\wctidown -us2
:Ready to send Startup Protocol1 to UCTi...
:... waiting (2 seconds) ...OK!
```

A screenshot of a Windows command prompt window titled "C:\WINNT\system32\cmd.exe". The command prompt shows a series of commands and responses in Korean. The final response is "OK!" with a green arrow pointing to it.

Figure3.



```
C:\WINNT\system32\cmd.exe
D:\개발자료\소형 모델\소형 LCD\U 서비스 교육 자료\SOFT 배치\교육 자료\SOFTWARE UPGRADE
응 프로그램>WUCT1\WUCT1_D2>download\wctidown -us2
:Ready to send Startup Protocol1 to UCTi...
:... waiting (2 seconds) ...OK!
Error : No Acknowledge from Slave!
```

A screenshot of a Windows command prompt window titled "C:\WINNT\system32\cmd.exe". The command prompt shows the same series of commands and responses as Figure 3, but the final response is "Error : No Acknowledge from Slave!" with a green arrow pointing to it.

Figure4.

FIGURE4 : Error condition.
Repeat “2) ~” progress.

- ⑧ Click the “Erase Flash” button and one more. Click the “Erase 16bit Flash” button and one more.

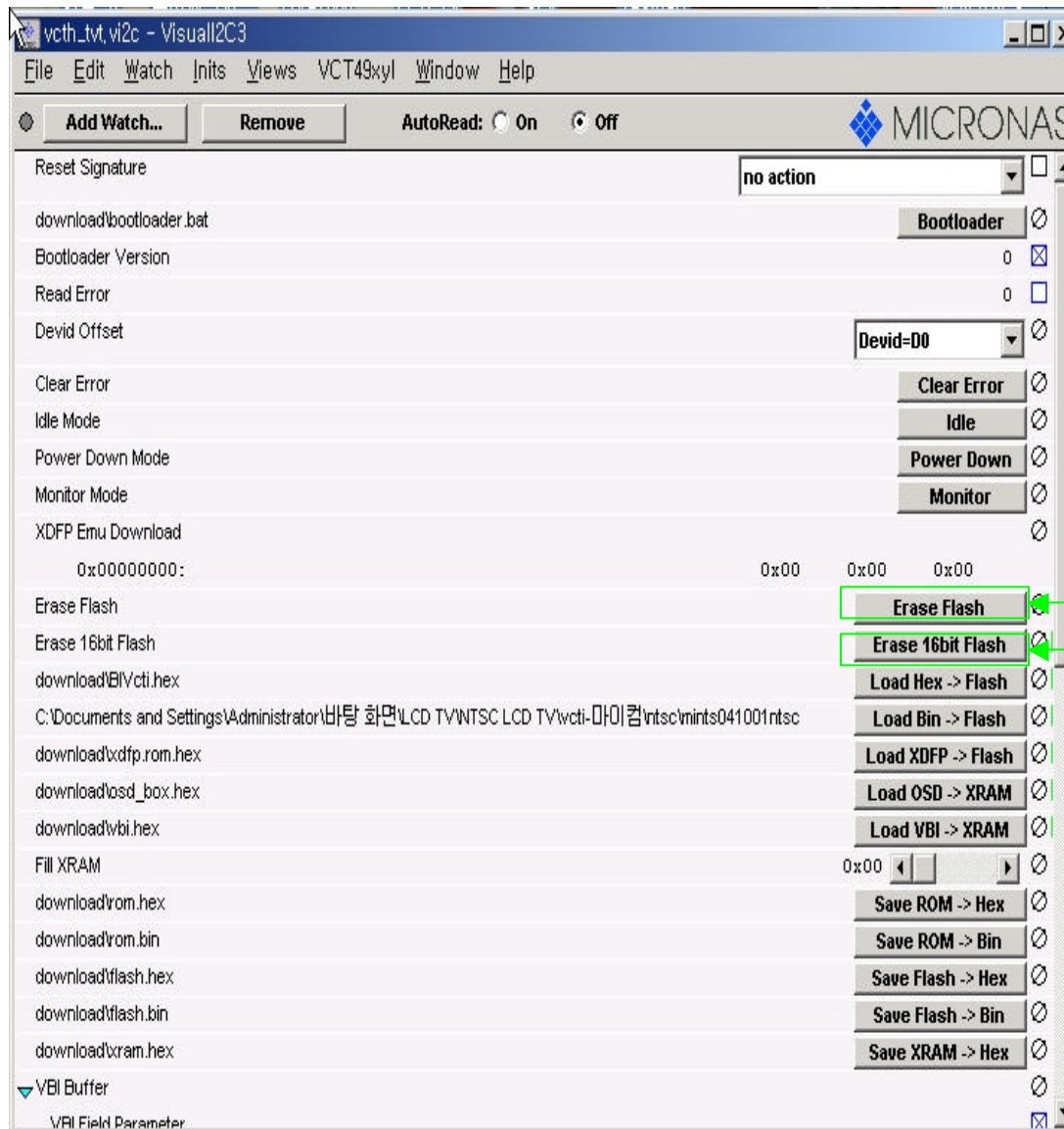


Figure5.

⑨ FIGURE6 : Click twice this.

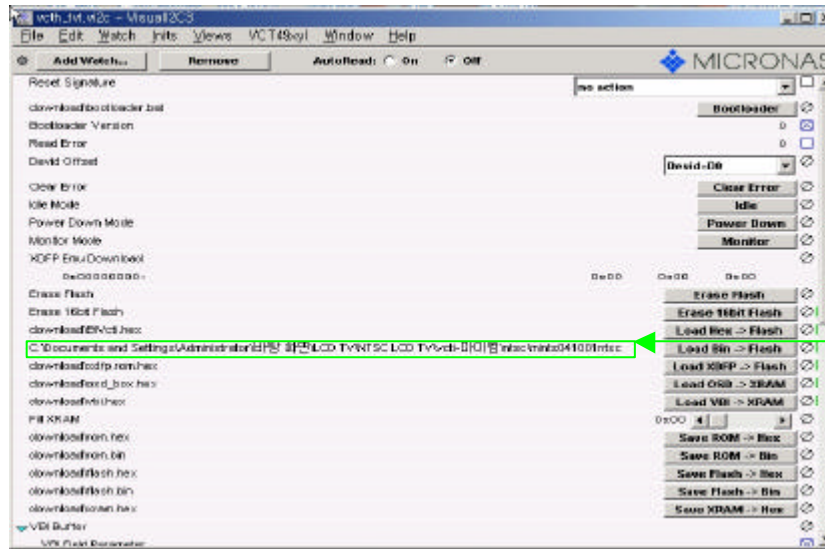
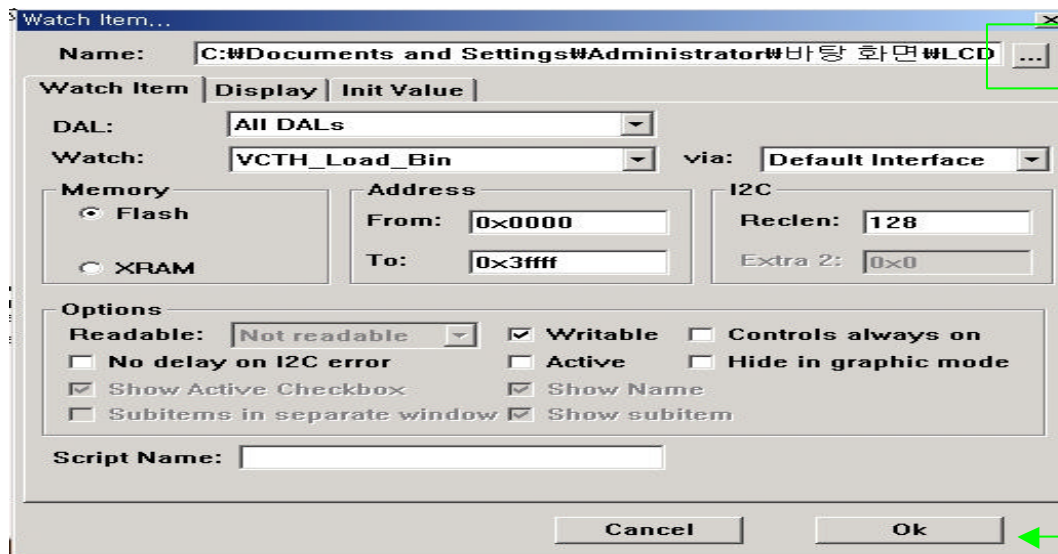


Figure6.



FIGUER 7 : After Click this,
and Select upgrade file.
Ex) - 20050202.bin

Figure7.

Finally Click the
“OK” button.



FIGURE 9 : After UPGRADE, this window disappear automatically.

- ⑪ After SOFT UPGRADE, disconnect serial cable to P13 wafer. Turn the SET off and on.